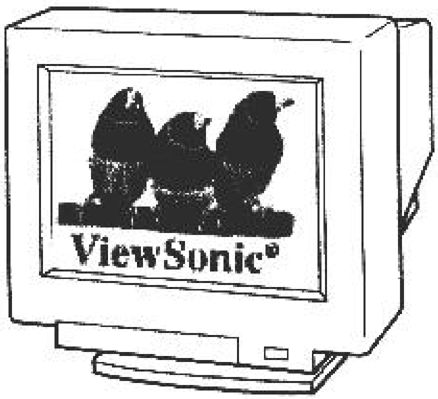
Service Manual

ViewSonic GT800

Model No. GT800

20" Digital Controlled Color Monitor
Graphics Series

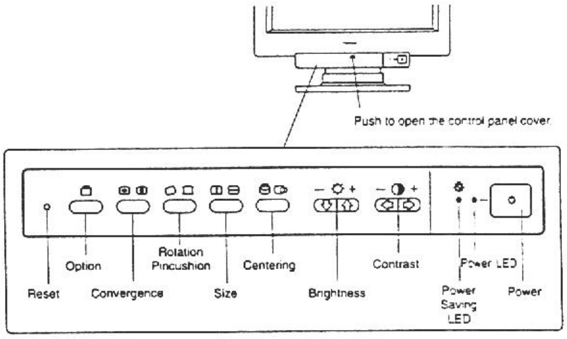


(Rev. 1 - July 1996)

ViewSonic® 20480 E. Business Parkway, Walnut, California 91789 USA - (800) 888-8583

OPERATION 3

Monitor Controls



OnView™ Control Buttons

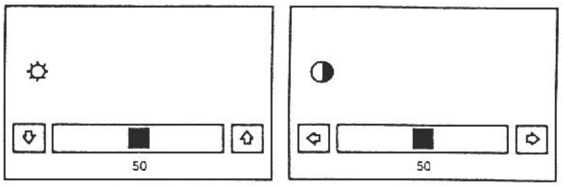
Press OnView Control Buttons as shown above to access OnView Display Screens. Display screens allow you to adjust the following: contrast, brightness, centering and sizing the screen horizontally and vertically, rotating the screen, adjusting the pincushion effect, convergence, color temperature, and locking the monitor buttons. The reset button resets controls to factory preset levels.

Monitor Self Test

The monitor self test allows you to check the functionality of the monitor when it is not receiving an input signal from a computer. You can perform the self test when the monitor is not connected to a computer or when it is connected and the computer is off.

When there is no input signal from a computer, press and hold the button for approximately 10 seconds. The self test screen (color bars) appears if the monitor is functioning properly. When you turn on your computer, the self test screen disappears.

Adjusting Brightness and Contrast



Press the up or down arrow or the left or right arrow to access the OnView™ Display Screens shown above. The screens disappear automatically a few seconds after releasing a button.

Note: Adjustments made with these controls are for all input signals that your monitor may run.

Brightness
– ☼ +
⇩ ⇧

This control adjusts the image brightness. (The brightness control adjusts the Black Level of the background.) Press the up or down arrow to access the OnView Display Screens shown above. Then:

– ☼
Press the ⇩ button to decrease the brightness of the screen image.

☼ +
Press the ⇧ button to increase the brightness of the screen image.

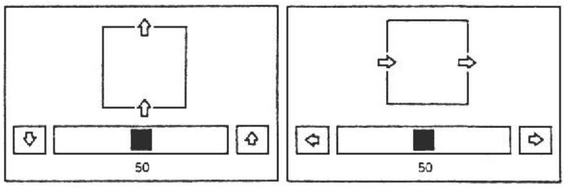
Contrast
– ◑ +
⇦ ⇨

This control adjusts the contrast between the background (black level) and the foreground (white level) of the screen image. Press the left or right arrow to access the OnView Display Screens shown above. Then:

– ◑
Press the ⇦ button to decrease the contrast of the image.

◑ +
Press the ⇨ button to increase the contrast of the image.

Centering the Screen Image



Press the button to access the OnView™ Display Screens shown above. To make the screens disappear, press the button again. Also, the screens will disappear automatically approximately 10 seconds after releasing a button.

Note: Adjustments made with these controls are only for the currently selected input signal from your computer.

Vertical Centering

This control adjusts the vertical position of the screen image. Press the button to access the OnView Display Screens shown above. Then:

– ☼
Press the ⇩ button to move the screen image down.

☼ +
Press the ⇧ button to move the screen image up.

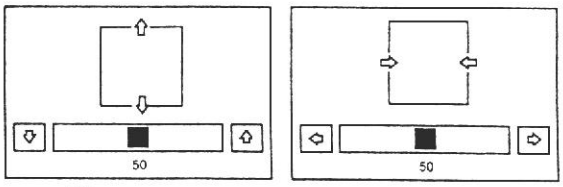
Horizontal Centering

This control adjusts the horizontal position of the screen image. Press the button to access the OnView Display Screens shown above. Then:

– ◑
Press the ⇦ button to move the screen image to the left.

◑ +
Press the ⇨ button to move the screen image to the right.

Adjusting Screen Height and Width



Press the button to access the OnView™ Display Screens shown above. To make the screens disappear, press the button again. Also, the screens will disappear automatically approximately 10 seconds after releasing a button.

Note: Adjustments made with these controls are only for the currently selected input signal from your computer.

Vertical Sizing

This control adjusts the vertical size of the screen image. Press the button to access the OnView Display Screens shown above. Then:

– ☼
Press the ⇩ button to decrease the height of the screen image.

☼ +
Press the ⇧ button to increase the height of the screen image.

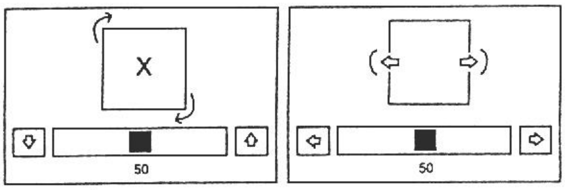
Horizontal Sizing

This control adjusts the horizontal size of the screen image. Press the button to access the OnView Display Screens shown above. Then:

– ◑
Press the ⇦ button to decrease the width of the screen image.

◑ +
Press the ⇨ button to increase the width of the screen image.

Aligning the Screen Image



Press the ◯◯ button to access the OnView™ Display Screens shown above. To make the screens disappear, press the ◯◯ button again. Also, the screens will disappear automatically approximately 10 seconds after releasing a button.

Rotation

Note: Adjustments made with this control are for all input signals that your monitor may run.

This control adjusts the tilt of the screen image relative to a horizontal line. Press the ◯◯ button to access the OnView Display Screens shown above. Then:

— ☼

Press the ▽ button to rotate the screen image counter-clockwise.

☼ +

Press the △ button to rotate the screen image clockwise.

Pincushion

Note: Adjustments made with this control are only for the currently selected input signal from your computer.

This control adjusts the straightness of the screen image's vertical edges. Press the ◯◯ button to access the OnView Display Screens shown above. Then:

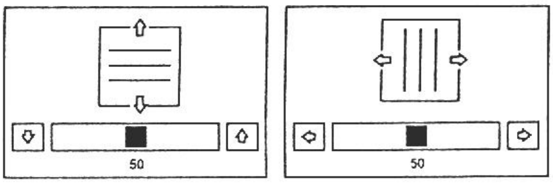
— ◑

Press the ◁ button to curve the image's edges inwards.

◑ +

Press the ▷ button to curve the image's edges outwards.

Convergence



Press the ◯◯ button to access the OnView™ Display Screens shown above. To make the screens disappear, press the ◯◯ button again. Also, the screens will disappear automatically approximately 10 seconds after releasing a button.

Note: Adjustments made with this control are for all input signals that your monitor may run.

Vertical Convergence

This control adjusts color alignment. You should only use this control if you can see red or blue around the horizontal segments of black letters on a white background.

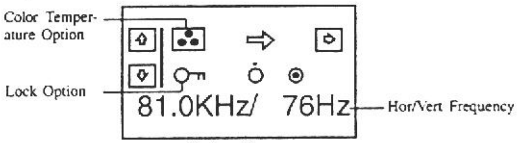
The Vertical Convergence control adjusts the alignment of the red and blue horizontal fields.

Horizontal Convergence

This control adjusts color alignment. You should only use this control if you can see red or blue around the vertical segments of black letters on a white background.

The Horizontal Convergence control adjusts the alignment of the red and blue vertical fields.

Option Menu: Color Temperature and Lock Options



Option Menu

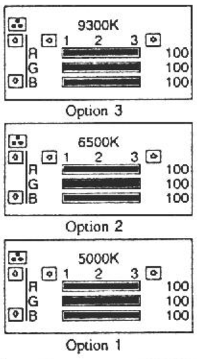
Press the ◯ button to access the Option Menu shown above. The Option Menu allows you to select a color temperature, as well as individually adjust the intensity of red (R), green (G), or blue (B) in the overall screen image. It also allows you to lock the monitor buttons. Horizontal and vertical frequencies of the currently selected input signal appear at the bottom of the menu.

To make the Option Menu disappear, press the ◯ button again. Also, the menu will disappear automatically approximately 30 seconds after releasing a button.

Note: Adjustments made with this control are for all input signals that your monitor may run.

Color Temperature Option

The ViewSonic *GT800* has three color temperatures set by the factory you can choose from: 9300K, 6500K, and 5000K. The most commonly used color temperatures are 9300K and 6500K. 9300K is a bluish white and best for office lighting. 6500K is more pink than 9300K and closer in color to common white paper.



Option 3

Option 2

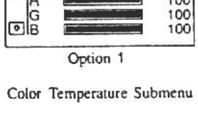
Option 1

To select a color temperature:

1. Press the ◯ button to access the Option Menu shown above. The Color Temperature Option is highlighted.
2. Press the ▷ button to access the Color Temperature Submenu.
3. Press the left or right arrow button ◁▷ to select a color temperature: 1 = 5000K, 2 = 6500K, or 3 = 9300K, as shown on the left.
4. Press the ◯ button to save your selection to memory. The Color Temperature Submenu disappears.

To individually adjust the intensity of red, green, or blue in the overall screen image, see the next page.

Option Menu (cont.): Adjusting Color Intensity



Option 3

Option 2

Option 1

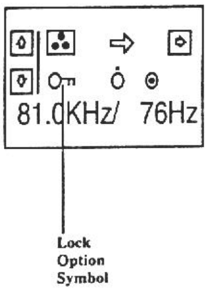
Color Temperature Submenu

You can individually adjust the intensity of red (R), green (G), or blue (B) in the overall screen image. The procedure is the same for all color temperatures, as shown on the left:

1. Press the ◯ button to access the Option Menu (see the previous page). The Color Temperature Option is highlighted.
2. Press the ▷ button to access the Color Temperature Submenu.
3. If you haven't already selected a color temperature, select one by pressing the left or right arrow button ◁▷: 1 = 5000K, 2 = 6500K, or 3 = 9300K. (See the previous page for more information.)
4. Press the up or down arrow button △▽ to highlight the red (R), green (G), or blue (B) scale bar. The setting for each scale bar is represented by a number on the right.
5. Press the left or right arrow button ◁▷ to decrease or increase the intensity of the color in the overall screen image.
6. If you want to adjust more than one color, repeat steps 4 and 5.
7. Press the ◯ button to save your adjustment(s). The Color Temperature Submenu disappears.

Note: If you make a change you don't like, you can reset a color to the original intensity set by the factory. While the Color Temperature Submenu is displayed, press the reset button with the tip of a ball point pen. (See page 13 for the location of the reset button.) All of the color settings (Red, Green, and Blue) for the currently selected color temperature will return to the intensity set by the factory.

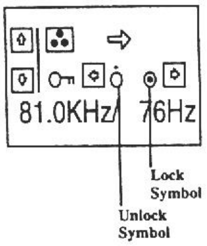
Option Menu (cont.): Lock Option



Press the ▭ button to access the Option Menu shown on the left. The Option Menu allows you to lock the monitor buttons, which protects against unauthorized use.

To make the screen disappear, press the ▭ button again. Also, the screen will disappear automatically approximately 30 seconds after releasing a button.

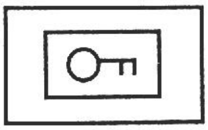
– ☼ ▽ With the Option Menu on screen, press the down arrow to select the Lock Option symbol. The display screen shown below left appears.



– ◑ + ◁▷ Selects the following:

◉ **Lock** all the buttons *except* the power switch and the option button.

○ **Unlock** the buttons.



The lock symbol shown on the left appears when a locked button is pressed.

– ◑ + ◁▷ To unlock the buttons, press the ▭ button to access the Option Menu. Press the ☼▽ button to select the lock option. Press the ◑◁ button to select the Unlock symbol.

TROUBLESHOOTING 4

If your **ViewSonic** *GT800* monitor is not performing properly, use the following troubleshooting chart for quick solutions to common problems. If the problem persists, call the dealer where you purchased the monitor. If further support is needed, **ViewSonic** customer service is available at 1-800-888-8583 (for U.S. or Canada only), (909) 869-7976 (calls from outside the U.S.).

Problem...	**Possible Cause...**	**Remedy...**
No picture, and neither the Power LED nor Power Saving LED is lit	Power cord disconnected?	Connect power cord.
	Power switch on?	Turn on power.
No picture, but Power Saving LED is orange	Monitor in power save mode?	Press any keyboard key.
	Computer or graphics card?	Check connections to video card.
	Signal cable properly connected?	Connect signal cable properly.
	Signal Cable Connector?	Check the connector for bent pins.
	Video Sync Signal?	Check that the video sync signal is specified for the monitor.
No picture, and the Power LED & the Power Saving LED are both flashing	Internal Component Failure?	Turn the monitor off and on. If the LED's are no longer flashing, the monitor is functioning properly. If the LED's continue to flash, contact your dealer or ViewSonic Customer Service.

Cont...

Troubleshooting Cont.

Problem...	**Possible Cause...**	**Remedy...**
Power LED flashes green	Video Sync Signal	Check that the video sync signal is specified for the monitor.
Image is not centered, too small or too large	Horizontal/Vertical Centering or Horizontal/Vertical Size	Adjust the Horizontal/Vertical Centering and/or Size Controls.
Characters appear indistinct or blurred, or image too dark	Brightness and contrast at minimum?	Adjust brightness and contrast.
Image is scrolling or unstable	Signal connector pin assignments incorrect?	Use correct signal connector.
	Signal cable properly connected?	Connect signal cable properly.
	Graphics Board?	Check your graphics board manual for the proper monitor setting.
Color is not pure	Build-up of magnetic fields within the monitor	Auto-degauss the monitor as follows: 1.) Make sure the monitor has been on for a minimum of ten minutes. 2.) Turn off the power. 3.) Allow the monitor to cool for a minimum of ten minutes. 4.) Turn the monitor on. The monitor will automatically degauss. If a second degauss cycle is needed, wait a minimum of 20 minutes before repeating the procedure above.
	Magnetic object nearby?	Reorient object or monitor.
	Signal connector pin assignments incorrect?	Use correct signal connector.
	Signal cable properly connected?	Connect signal cable properly.

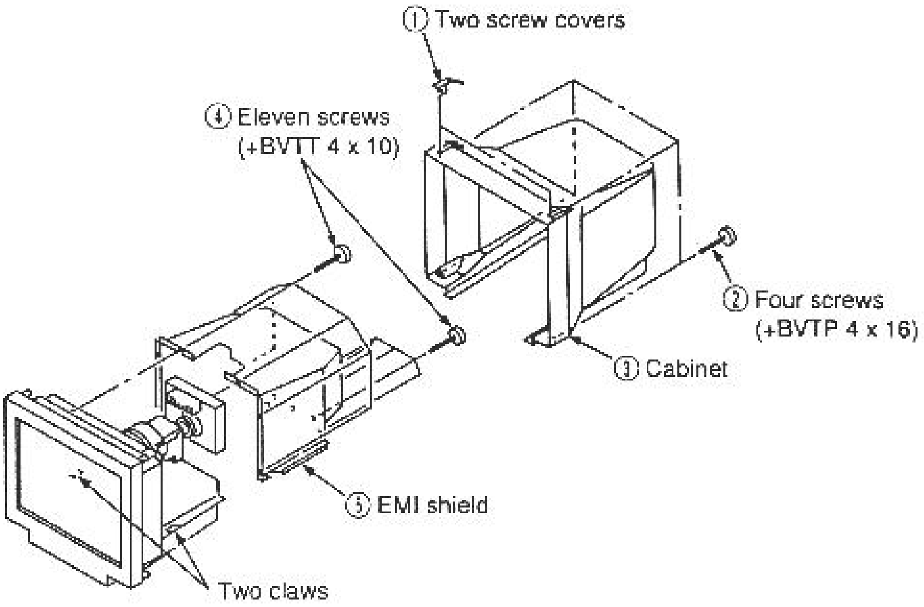
Cont...

Troubleshooting Cont.

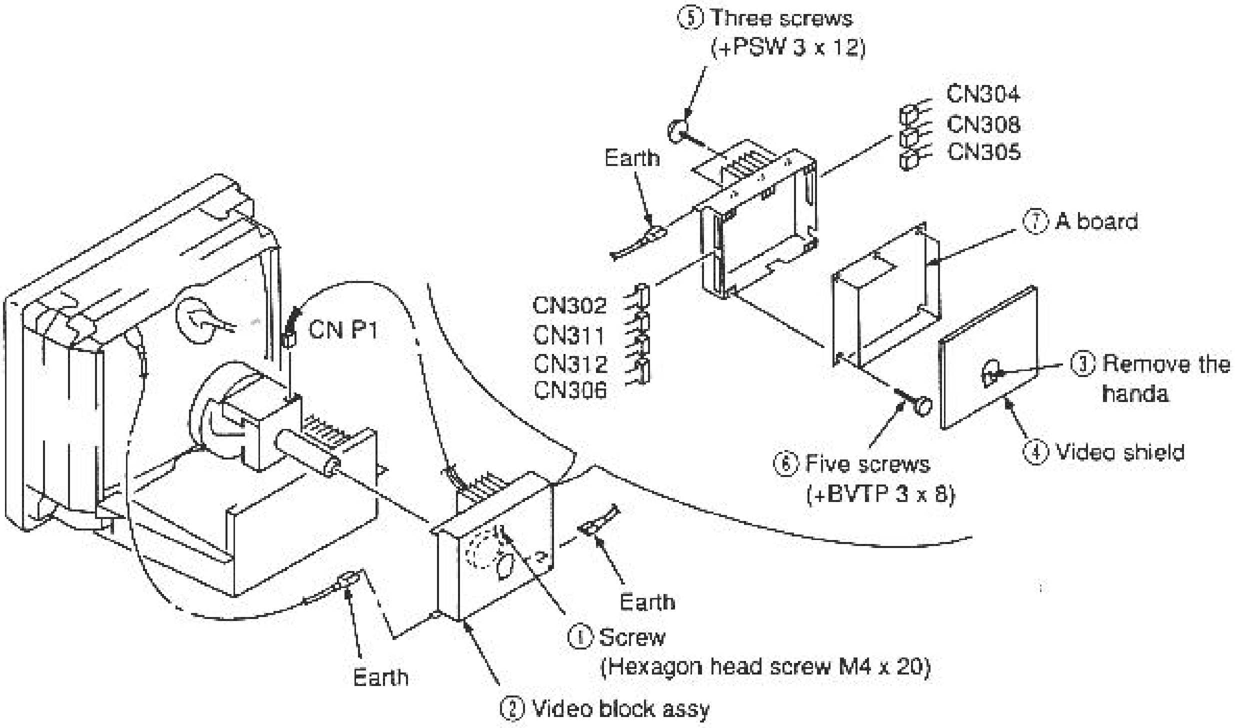
Problem...	**Possible Cause...**	**Remedy...**
Two very fine horizontal lines (wires) are visible	The wires you see are a design feature which reinforce the aperture grille.	The aperture grille is designed to give the monitor more color and brightness.
Control buttons do not work	Are you pressing two or more control buttons simultaneously?	Press only one button at a time.
Image bounces or has wavy oscillations	Magnetic object nearby?	Reorient object or monitor.
	Electric power wiring?	Your office may have electric power wiring behind the wall. Move the monitor away from the wall.
Image is distorted	Is the earth's magnetic field interfering with display?	Face monitor east for best image quality.

SECTION 2
DISASSEMBLY

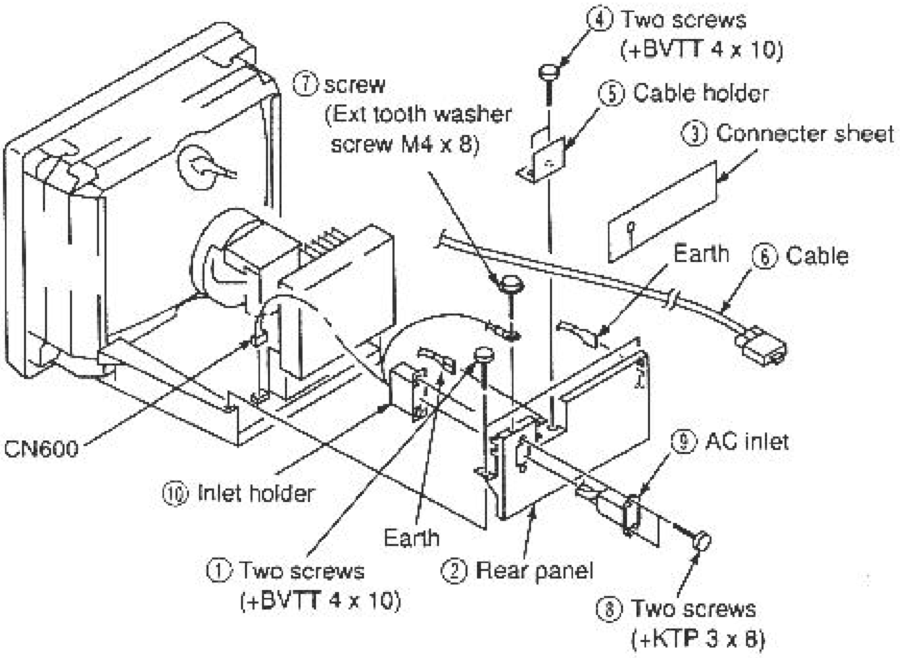
2-1. CABINET AND EMI SHIELD REMOVAL


① Two screw covers
④ Eleven screws
(+BVTT 4 x 10)
② Four screws
(+BVTP 4 x 16)
③ Cabinet
⑤ EMI shield
Two claws

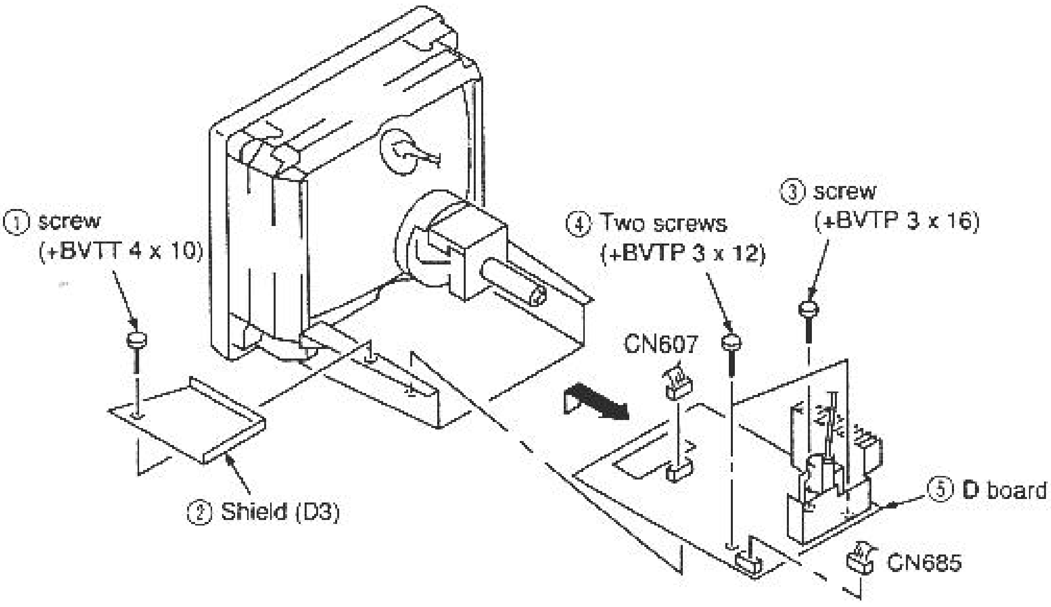
2-2. A BOARD REMOVAL


⑤ Three screws
(+PSW 3 x 12)
CN304
CN308
CN305
Earth
⑦ A board
CN302
CN311
CN312
CN306
CN P1
③ Remove the handa
④ Video shield
⑥ Five screws
(+BVTP 3 x 8)
Earth
① Screw
(Hexagon head screw M4 x 20)
Earth
② Video block assy

2-3. REAR PANEL REMOVAL

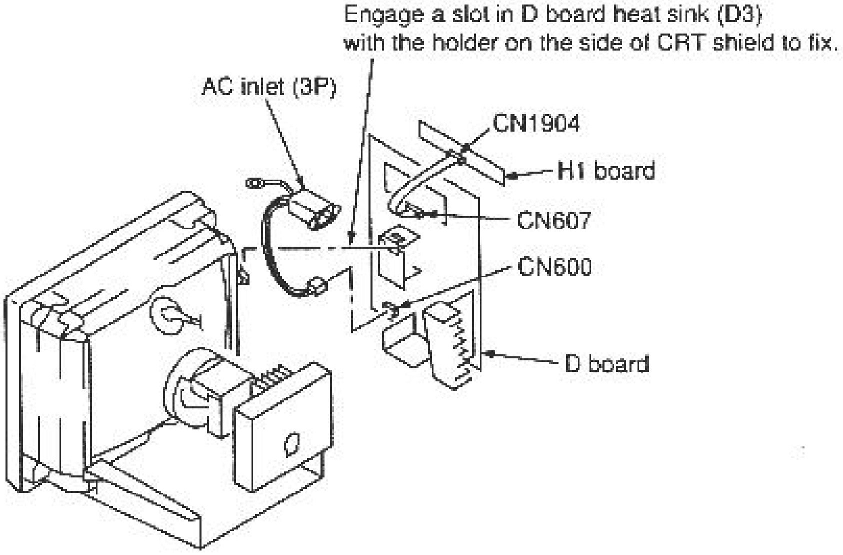

④ Two screws
(+BVTT 4 x 10)
⑦ screw
(Ext tooth washer
screw M4 x 8)
⑤ Cable holder
③ Connecter sheet
Earth
⑥ Cable
CN600
⑨ AC inlet
⑩ Inlet holder
Earth
① Two screws
(+BVTT 4 x 10)
② Rear panel
⑧ Two screws
(+KTP 3 x 8)

2-4. D BOARD REMOVAL

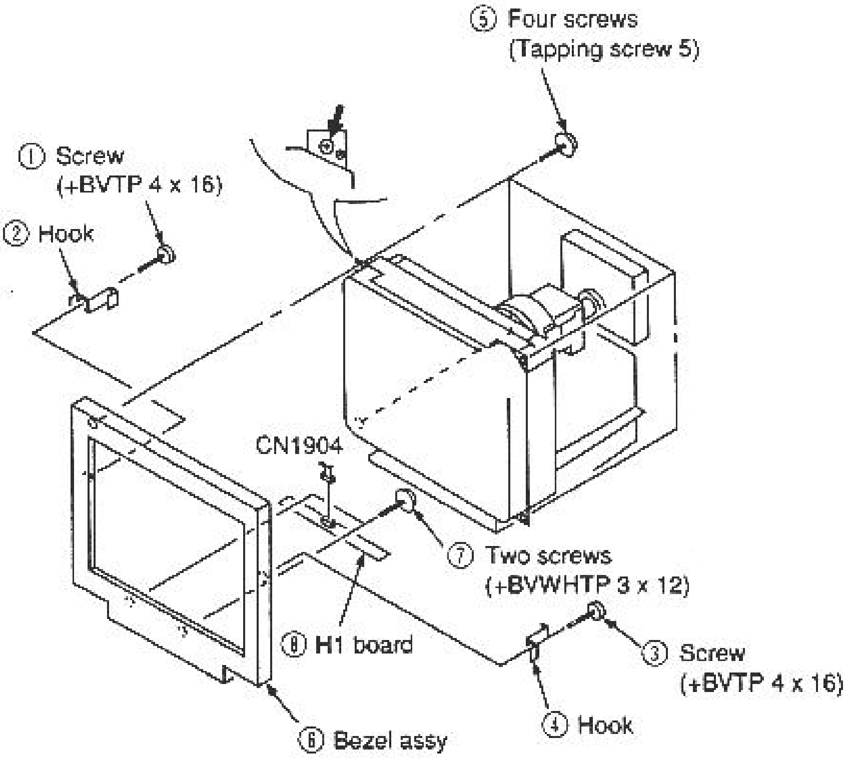

③ screw
(+BVTP 3 x 16)
① screw
(+BVTT 4 x 10)
④ Two screws
(+BVTP 3 x 12)
CN607
⑤ D board
② Shield (D3)
CN685

2-5. SERVICE POSITION

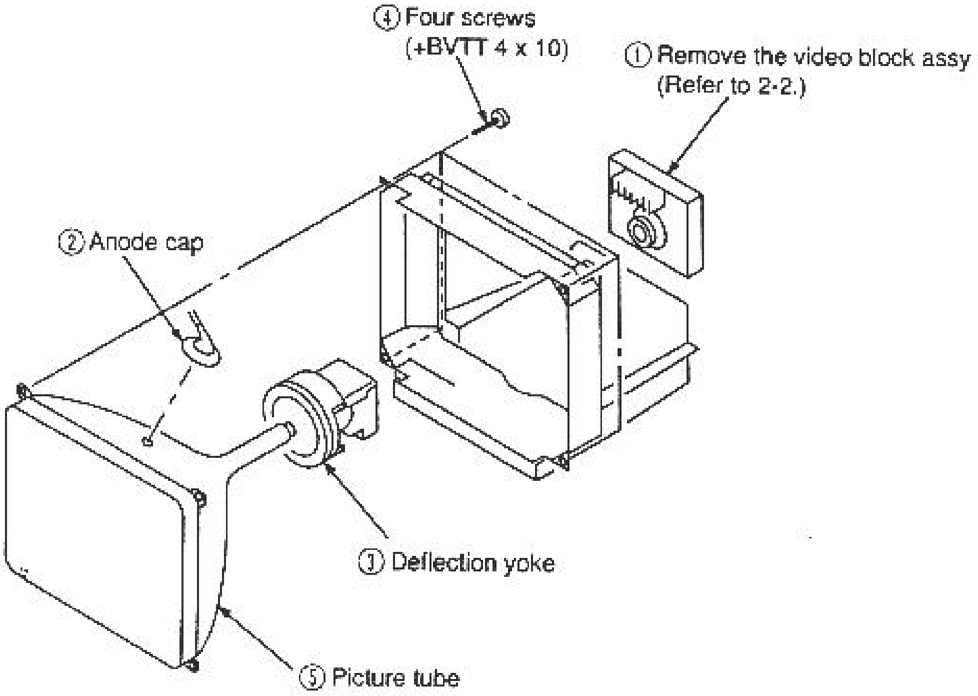
Remove the AC inlet (Refer to 2-3.)
Remove the D board (Refer to 2-4.)
Remove the H1 board (Refer to 2-6.)


Engage a slot in D board heat sink (D3)
with the holder on the side of CRT shield to fix.
AC inlet (3P)
CN1904
H1 board
CN607
CN600
D board

2-6. H1 BOARD REMOVAL


⑤ Four screws
(Tapping screw 5)
① Screw
(+BVTP 4 x 16)
② Hook
CN1904
⑦ Two screws
(+BVWHTP 3 x 12)
⑧ H1 board
③ Screw
(+BVTP 4 x 16)
④ Hook
⑥ Bezel assy

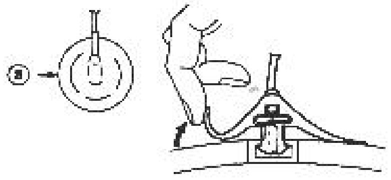
2-7. PICTURE TUBE REMOVAL


④ Four screws
(+BVTT 4 x 10)
① Remove the video block assy
(Refer to 2-2.)
② Anode cap
③ Deflection yoke
⑤ Picture tube

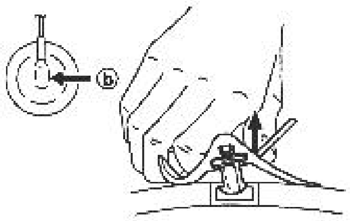
• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon painted on the CRT, af removing the anode.

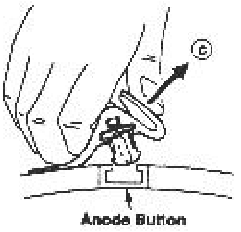
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.


ⓒ
Anode Button

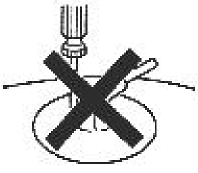
③ When one side of the rubber cap separated from the anode button, t anode-cap can be removed by turni up the rubber cap and pulling up it in t direction of the arrow ⓒ.

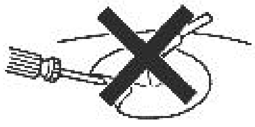
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SAFETY RELATED ADJUSTMENT

When replacing or repairing the shown below table, the following operational checks must be performed as a safety precaution against X-rays emissions from the unit.

	Part Replaced (⧗)
HV ADJ	RV401

	Part Replaced (◪)
HV Regulator Circuit	D board IC401, IC403, RV401, FBT(T404), D425, R423, R460, R461, R462, R493 • Mounted D board
HV Hold-Down Circuit	D board IC401, D439, D442, D443, D444, R422, R435, R448, R490 • Mounted D board
Beam Current Protector Circuit	D board IC401, D429, D445, R435, R470, R472, R487, R491, R497, R501, R503, R508 • Mounted D board

※ Confirm one minute later turning on the power.

Check Condition

- Input voltage : 118~122 V AC
- Input signal : White dots or Cross Hatch
- Controls : BRT and CONT → Minimum

a) HV Hold-Down Check

1) Using an external DC Power supply, apply the voltage shown below between cathode of D439 on D board and GND, and confirm that the HV Hold-Down circuit works. (TV Raster disappears)
   Standard voltage: Less than 28.40 V DC

b) Beam Current Protector Circuit Check-1 (Hardware logic)

1) Record the initial value of ABL-SHUTDOWN and using a PC computer, input the "255" for resistor value.
2) Connect a resistor (100 KΩ) between pin ② of CN811 and pin ⑮ of CN812.
3) Confirm that the raster appears on the CRT screen.
4) Connect a variable resistor (12 KΩ or more) and an ammeter in series between pin ⑪ of FBT (T404) and GND, then, decrease gradually the resistance of the variable resistor from mamximum to minimum, and confirm that the Beam Current Protector Circuit works (TV Raster disappears).
   The current must be within the range shown below.
   Standard current: Less than 1.48 mA
5) Turn off the Unit.

c) Beam Current Protector Circuit Check-2 (Software logic)

1) Make a short between pin ⑱ of CN811 and pin ① of CN810.
2) Confirm that the raster appears on the CRT screen.
3) Connect a variable resistor (12 KΩ or more) and an ammeter in series between pin ⑪ of FBT (T404) and GND, then, decrease gradually the resistance of the variable resistor from maximum to minimum, and confirm that the Beam Current Protector Circuit works (TV Raster disappears).
   The current must be within the range shown below.
   Standard current: Less than 1.30 mA
4) Back the value of ABL-SHUTDOWN to the initial regulation value.
5) Turn off the Unit.

SECTION 4

ADJUSTMENTS

●Landing Rough Adjustment

1. Enter the full white signal. (or the full black dots signal).
2. Set the contrast to the maximum.
3. Make the screen monogreen.
4. Reverse the DY, and adjust coarsely the purity magnet so that a green raster positions in the center of screen.

Note: Off the outputs from R ch and B ch of SG.

5. Moving the DY forward, adjust so that an entire screen becomes monogreen.
6. Adjust the tilt of DY, and fix lightly with a clamp.

Note: "TILT" shall be set at 0.

●Landing Fine Adjustment

1. Put the set inside the Helmholtz coil.
2. Input the single green signal and set the CONT control to MAX.

Note: Set to Σ Ik=300 µA with the signal green signal, and after aging for about 30 minutes, adjust so that it is exactly this value.

3. Demagnetize the metal part of the chassis with the hand degausser and coil degausser, and the CRT surface with the hand degausser.
   Input AC 230V to AC IN, turn on and off the power to perform auto degaussing.
   Demagnetize the CRT surface with the hand degausser again.

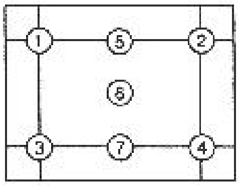
Note:

(1) Adjust in a non-magnetic field. BV=45uT.

(2) If adjusting in a magnetic fields, add the shift from the non-magnetic field in your estimation.

4. Attach the wobbling coil to the designated part of the CRT neck.
5. Attach the sensor of the landing adjustment unit on the CRT surface.
6. Adjust the DY position and purity, and the DY tilt, and landing of the center and 4 corners with the landing checker.

<Specification>



Adjust the green of corners ① to ④, and center ⑥ to ±5 µm, a red and blue to within ±7 µm of green, and the difference tween red and blue to within ±10 µm.
Adjust the green of ⑤ and ⑦ to within ±10 µm, and red and b to within ±7 µm of green, and the difference between red a blue to within ±10 µm.

(Set each corner to 1st frame of the crosshatch.)

7. For the up/down and left/right swing, swing the DY and sert a wedge so that the up and down pins are equal at the and bottom and the horizontal trapezoid is equal at the and right. Insert the wedge firmly so that the DY does shake.
8. Check the landing of each corner, and if they do not sati the specification, paste a Disk-Mg onto the funnel and just.

Note:

(1) Do not paste more than 2 magnets to one corner.

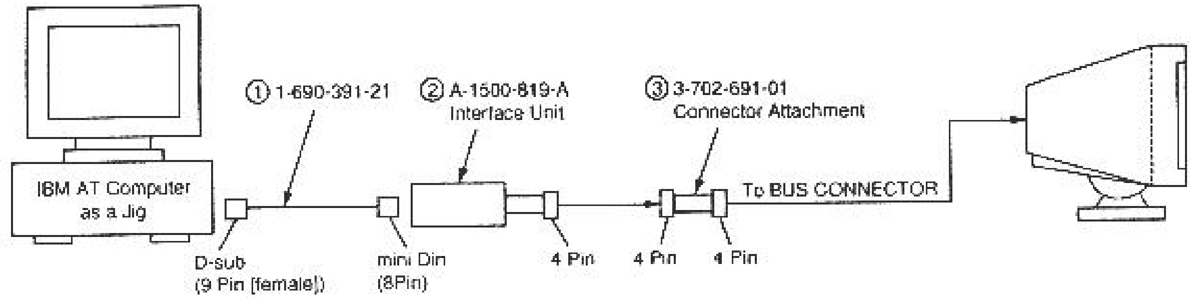
(2) Paste within 80 to 100 mm from the DY on the diagonal of the magnet.

(3) If using the magnet, be sure to demagnetize with the ha degausser and check.

9. Remove the sensor and wobbling coil.
10. Switch the signal to R.G.B., and check that each colo pure.
11. Check that the DY is not tilting, and fix the purity Mg wi white pen.
12. Fasten DY with screw.

Note: Torque 20 ±2kg·cm

Connect the communication cable of the computer to the connector located on the D board on the monitor. Run the service software and then follow the instruction.


IBM AT Computer
as a Jig
① 1-690-391-21
② A-1500-819-A
Interface Unit
③ 3-702-691-01
Connector Attachment
To BUS CONNECTOR
D-sub
(9 Pin [female])
mini Din
(8Pin)
4 Pin
4 Pin
4 Pin

*The parts above (① ~ ③) are necessary for DAS adjustment.

● Convergence Rough Adjustment

(1) Receive an image of the white crosshatch signals (white lines on black).
(2) Place the protrusions (A and B) of the 6-fold poles magnet attached to the CRT neck upon each other. (See fig. 3)
(3) Make rough adjustment of the H direction convergence by using H. STAT VR (RV101. Right side of the video case).
(4) Make a rough adjustment of the V direction convergence by using "V. CONV".

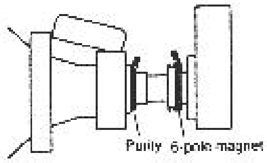

Purity
6-pole magnet

Fig. 1

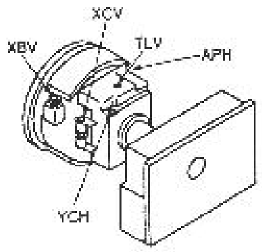
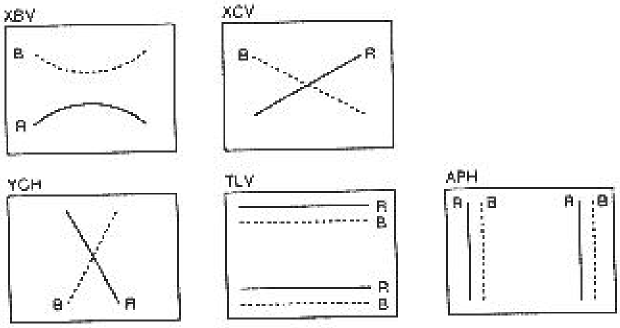

XCV
XBV
TLV
APH
YCH

Fig. 2


XBV
B
R
XCV
B
R
YCH
B
R
TLV
R
B
R
B
APH
R
B
R
B

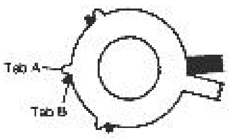


Fig. 3

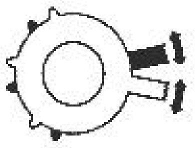


Fig. 4

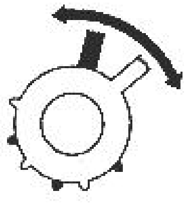
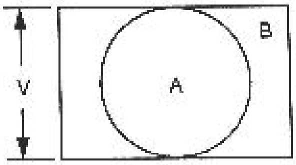


Fig. 5

● Convergence Specification

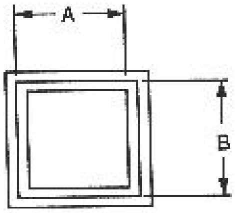


MODE	4	1, 2, 3, 5, 6, 7, 8, 9, 10
A	0.30 mm	0.28 mm
B	0.40 mm	0.32 mm

● White Balance Adjustment Specification

(1) 9300K
X = 0.283 ± 0.005
Y = 0.298 ± 0.005
(All White)
(2) 6500K
X = 0.313 ± 0.005
Y = 0.329 ± 0.005
(3) 5000K
X = 0.346 ± 0.005
Y = 0.359 ± 0.005

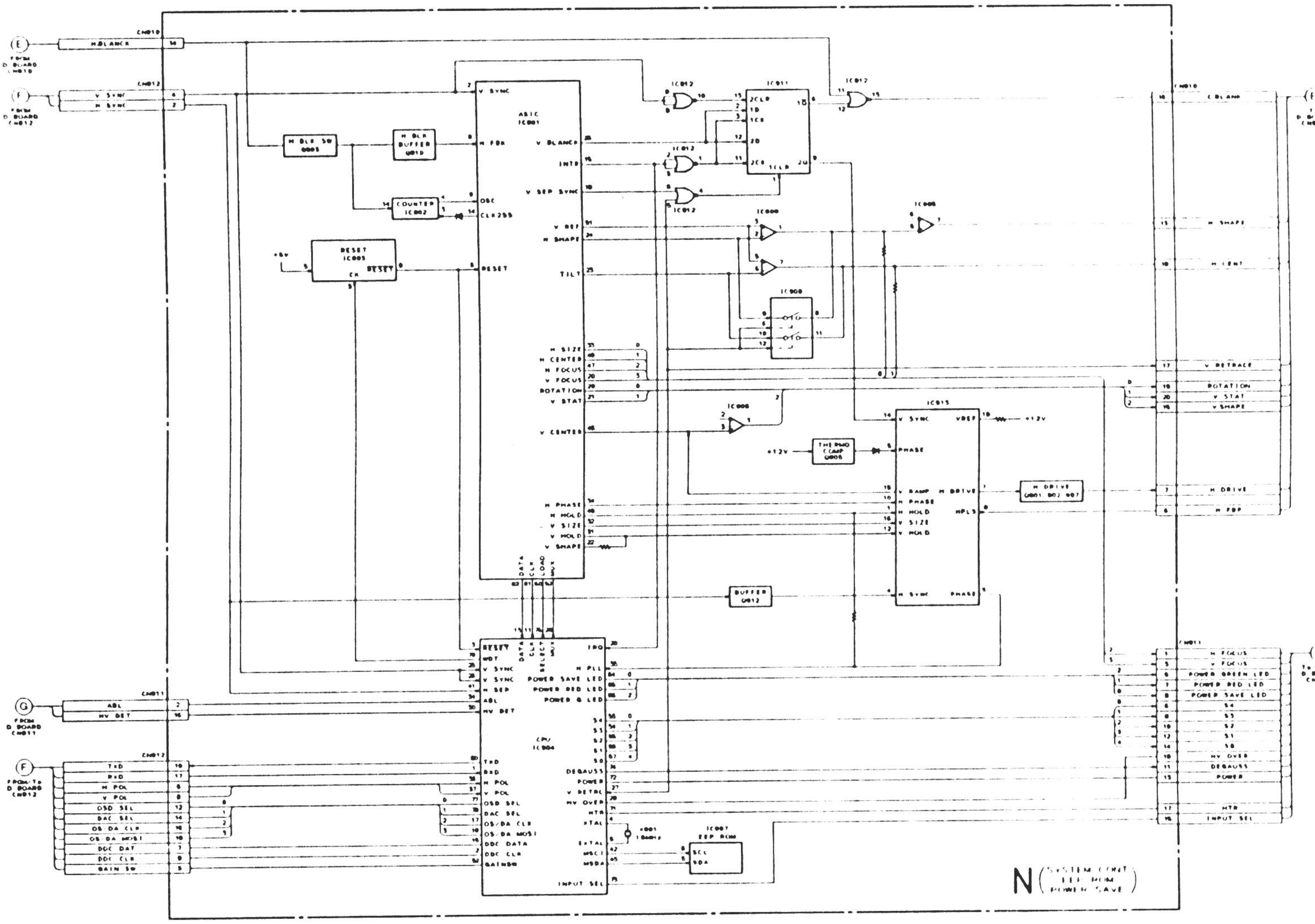
● Vertical and Horizontal Position and Size Specification

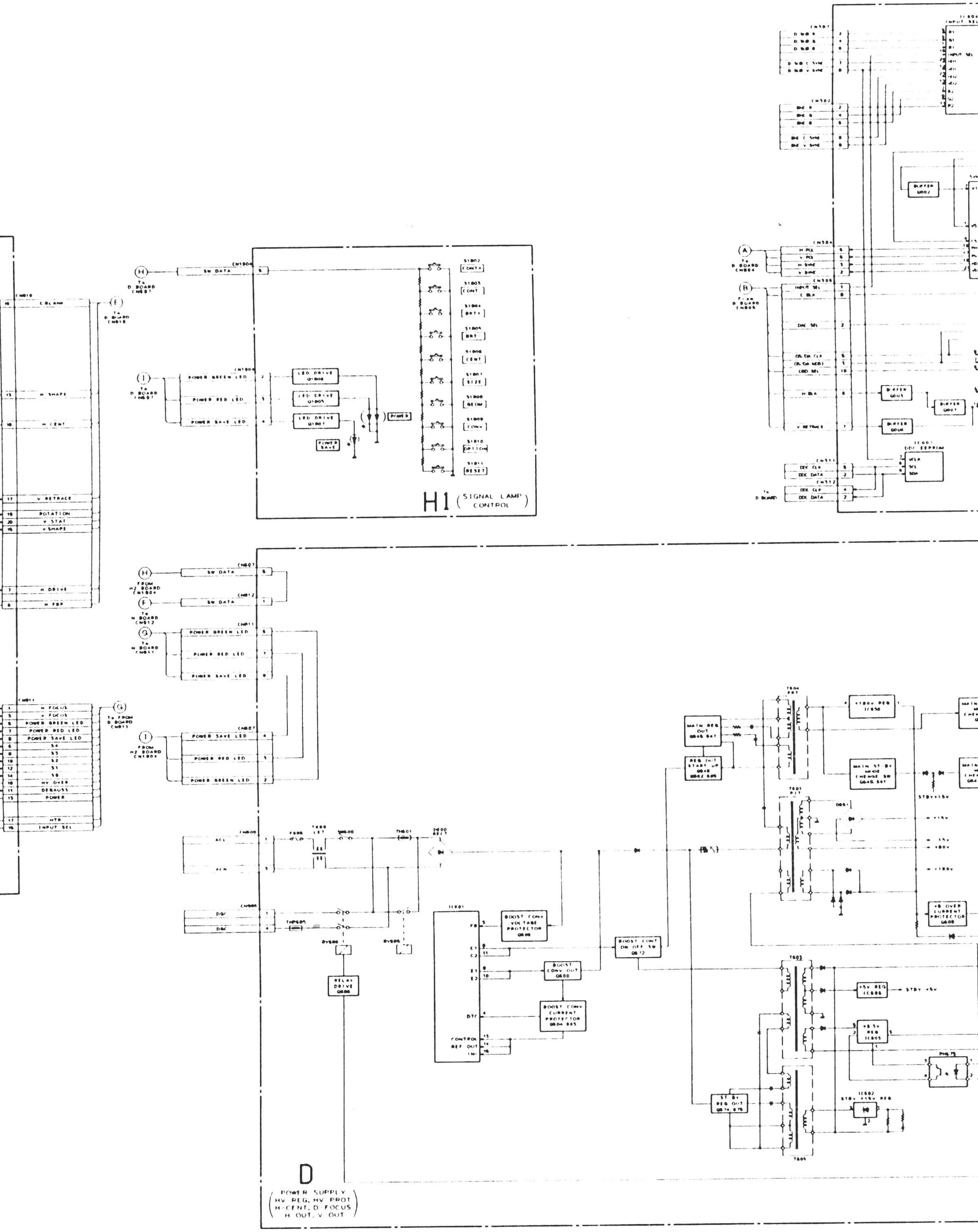


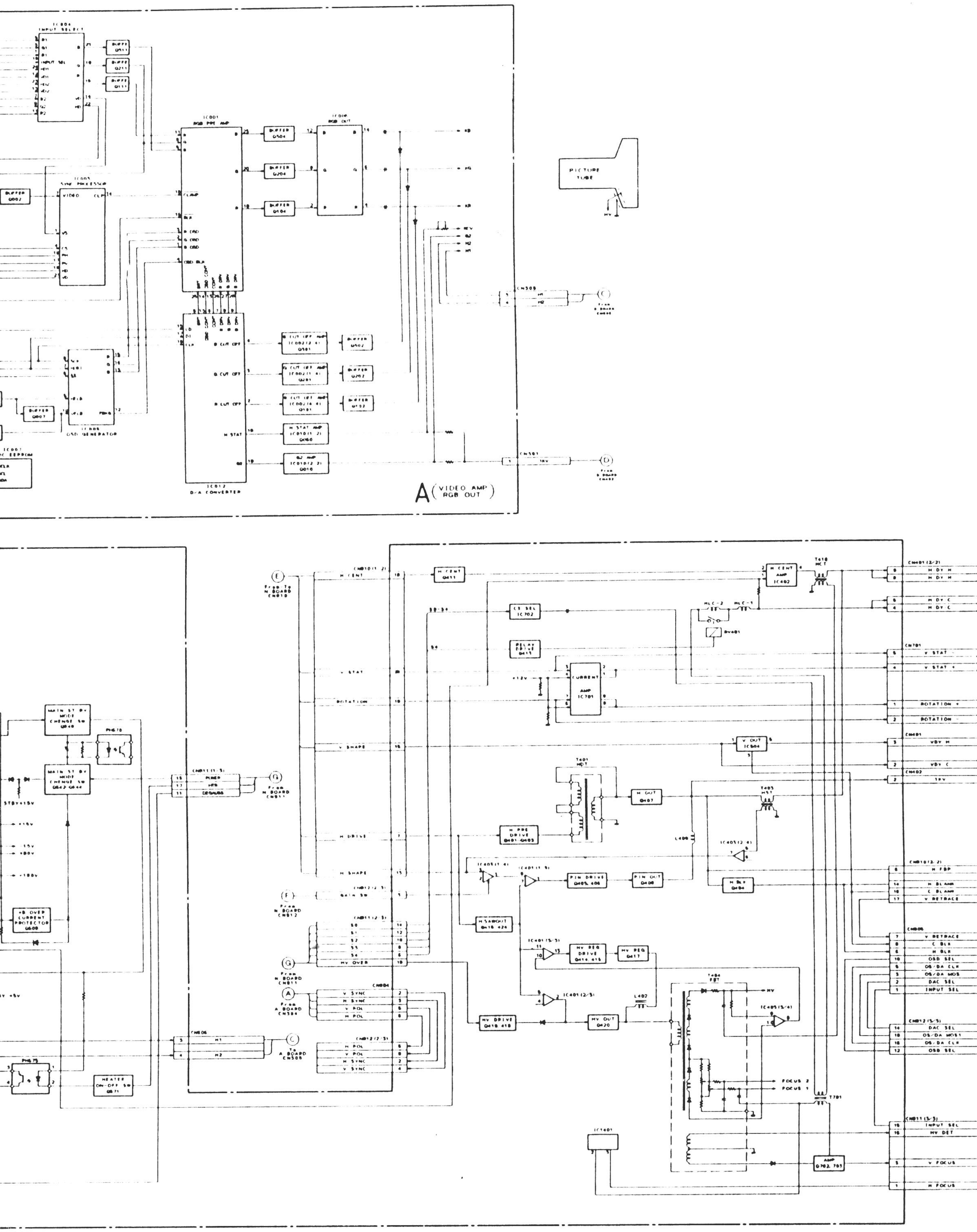
MODE	4	1, 2, 3, 5, 6, 7, 8, 9, 10
A	350 mm	373 mm
B	280 mm	280 mm

SECTION 5
DIAGRAMS

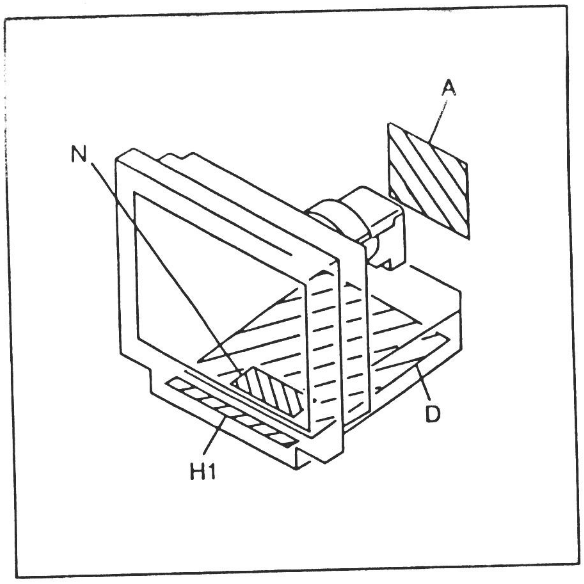
5-1. BLOCK DIAGRAM (with FRAME SCHEMATIC DIAGRAM)


E
FROM D BOARD CN010
CN010
H BLANCK
F
FROM D BOARD CN012
CN012
V SYNC
H SYNC
H BLK SW Q005
H BLK BUFFER Q010
COUNTER IC002
RESET IC005
+5V
CK
RESET
ASIC IC001
V SYNC
H FBR
OSC
CLK255
RESET
V BLANCK
INTR
V SEP SYNC
V REF
H SHAPE
TILT
H SIZE
H CENTER
H FOCUS
V FOCUS
ROTATION
V STAT
V CENTER
H PHASE
H HOLD
V SIZE
V HOLD
V SHAPE
DATA
CLK
LOAD
MUX
IC012
IC011
2CLR
1D
1CK
2D
2CK
1CLR
IC008
IC900
IC006
IC013
V SYNC
VREF
+12V
THERMO COMP Q008
PHASE
V RAMP
H PHASE
H HOLD
V SIZE
V HOLD
H DRIVE
HPLS
H DRIVE (Q801, 802, 807)
BUFFER Q012
H SYNC
PHASE
CN010
C BLANK
H SHAPE
H CENT
V RETRACE
ROTATION
V STAT
V SHAPE
H DRIVE
H FBP
G
FROM D BOARD CN011
CN011
ABL
HV DET
FROM/TO D BOARD CN012
TXD
RXD
H POL
V POL
OSD SEL
DAC SEL
OS/DA CLK
OS/DA MOSI
DDC DAT
DDC CLK
GAIN SW
CPU IC004
RESET
WDT
V SYNC
H SEP
ABL
HV DET
TXD
RXD
H POL
V POL
OSD SEL
DAC SEL
OS/DA CLK
OS/DA MOSI
DDC DATA
DDC CLK
GAINSW
DATA
CLK
SELECT
MUX
IRQ
H PLL
POWER SAVE LED
POWER RED LED
POWER G LED
S4
S3
S2
S1
S0
DEGAUSS
POWER
V RETRC
HV OVER
HTR
XTAL
EXTAL
MSCL
MSDA
INPUT SEL
X001 10MHz
IC007 EEP ROM
SCL
SDA
CN011
H FOCUS
V FOCUS
POWER GREEN LED
POWER RED LED
POWER SAVE LED
S4
S3
S2
S1
S0
HV OVER
DEGAUSS
POWER
HTR
INPUT SEL
N (SYSTEM CONT EEP ROM POWER SAVE)


CN1004
SW DATA
To D BOARD CN607
To D BOARD CN610
POWER GREEN LED
POWER RED LED
POWER SAVE LED
LED DRIVE Q1806
LED DRIVE Q1805
LED DRIVE Q1807
POWER
POWER SAVE
S1802 CONT+
S1803 CONT
S1804 BRT+
S1805 BRT
S1806 CENT
S1807 SIZE
S1808 GEOM
S1809 CONV
S1810 OPTION
S1811 RESET
H1 (SIGNAL LAMP CONTROL)
C BLANK
H SHAPE
H CENT
V RETRACE
ROTATION
V STAT
V SHAPE
H DRIVE
H FBP
H FOCUS
V FOCUS
S4
S3
S2
S1
S0
HV OVER
DEGAUSS
POWER
HTR
INPUT SEL
CN607
CN612
CN611
FROM H2 BOARD CN1004
To N BOARD CN612
To N BOARD CN611
To FROM D BOARD CN611
CN600
ACL
ACN
F600
T600 LFT
THS01
D600 RECT
CN606
DGC
THP605
RY606
RY605
RELAY DRIVE Q606
IC601
FB
C1
C2
E1
E2
DTC
CONTROL
REF OUT
IN-
BOOST CONV VOLTAGE PROTECTOR Q608
BOOST CONV OUT Q600
BOOST CONV CURRENT PROTECTOR Q604 605
BOOST CONT ON OFF SW Q672
MAIN REG OUT Q646 647
REG CKT START UP Q648 Q602 609
T604 FBT
+180V REG IC650
MAIN ST-BY MODE CHENGE SW Q640 641
T601 PIT
D661
STBY+15V
+15V
-15V
+80V
+180V
+B OVER CURRENT PROTECTOR Q608
T603
+5V REG IC606
STBY +5V
+8.5V REG IC605
PH675
ST-BY REG OUT Q674 675
IC602 STBY +15V REG
T605
D (POWER SUPPLY HV REG, HV PROT H-CENT, D FOCUS H OUT, V OUT)
CN307
CN302
CN304
CN305
CN311
CN312
A
B
To D BOARD CN804
From D BOARD CN805
H POL
V POL
H SYNC
V SYNC
INPUT SEL
C BLK
DAC SEL
H BLK
V RETRACE
DDC CLK
DDC DATA
IC607 DDC EEPROM
VCLK
SCL
SDA
BUFFER Q607
BUFFER Q605
INPUT SEL
To D BOARD


IC804 INPUT SELECT
INPUT SEL
BUFFER Q311
BUFFER Q211
BUFFER Q111
BUFFER Q002
IC805 SYNC PROCESSOR
VIDEO
CLP
IC801 RGB PRE AMP
CLAMP
BLK
R OSD
G OSD
B OSD
OSD BLK
BUFFER Q504
BUFFER Q204
BUFFER Q104
IC808 RGB OUT
KB
KG
KR
HEV
H2
H1
PICTURE TUBE
HV
CN308
From D BOARD CN808
IC812 D/A CONVERTER
B CUT OFF
G CUT OFF
R CUT OFF
H STAT
G2
B CUT OFF AMP IC802(2/4) Q501
G CUT OFF AMP IC802(1/4) Q201
R CUT OFF AMP IC802(4/4) Q101
BUFFER Q502
BUFFER Q202
BUFFER Q102
H STAT AMP IC810(1/2) Q060
G2 AMP IC810(2/2) Q010
CN301
1KV
From D BOARD CN402
BUFFER Q007
IC806 OSD GENERATOR
IC807 EEPROM
A(VIDEO AMP RGB OUT)
MAIN ST BY MODE CHENGE SW Q840
PH670
MAIN ST BY MODE CHENGE SW Q842 Q844
STBY+15V
+15V
-15V
+80V
+180V
+B OVER CURRENT PROTECTOR Q600
PH675
HEATER ON-OFF SW Q871
CN811(1/3)
POWER
HTR
DEGAUSS
From N BOARD CN811
CN606
H1
H2
To A BOARD CN308
CN810(1/2)
H CENT
V STAT
ROTATION
V SHAPE
H DRIVE
H SHAPE
From To N BOARD CN810
CN812(2/3)
MAIN SW
From N BOARD CN812
CN811(2/3)
S0
S1
S2
S3
S4
HV OVER
From N BOARD CN811
CN804
V SYNC
H SYNC
V POL
H POL
From A BOARD CN304
CN812(2/3)
H POL
V POL
H SYNC
V SYNC
H CENT Q411
S0-S4
S4
CS SEL IC702
RELAY DRIVE Q413
+12V
CURRENT AMP IC701
H CENT AMP IC402
T410 HCT
HLC-2
HLC-1
RY401
CN401(2/2)
H DY H
H DY C
CN701
V STAT -
V STAT +
ROTATION +
ROTATION -
CN401
V OUT IC504
VDY H
VDY C
CN402
1KV
T401 HDT
H OUT Q407
T403 HST
H PRE DRIVE Q401-Q403
L408
IC405(2/4)
IC405(1/4)
IC401(1/5)
PIN DRIVE Q405, 406
PIN OUT Q408
H BLK Q404
CN810(2/2)
H FBP
H BLANK
C BLANK
V RETRACE
H SAWOUT Q418 424
IC401(5/5)
HV REG DRIVE Q414, 415
HV REG Q417
IC401(2/5)
L402
HV DRIVE Q418 418
HV OUT Q420
T404 FBT
HV
IC405(5/4)
FOCUS 2
FOCUS 1
T701
IC1401
AMP Q702, 703
CN808
V RETRACE
C BLK
H BLK
OSD SEL
OS/DA CLK
OS/DA MOS
DAC SEL
INPUT SEL
CN812(3/3)
DAC SEL
OS/DA MOS1
OS/DA CLK
OSD SEL
CN811(3/3)
INPUT SEL
HV DET
V FOCUS
H FOCUS

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 V or less are not indicated except for electrolytic.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm Rating electrical power 1/4 W (CHIP : 1/10 W)

- All resistors are in ohms.
- —▭— : nonflammable resistor.
- —∿— : fusible resistor.
- △ : internal component.
- ▭ : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⏚ : earth-ground.
- ⊥ : earth-chassis.
- The components identified by ⋈ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. (See page 13)
- When replacing the part in below table, be sure to perform the related adjustment.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

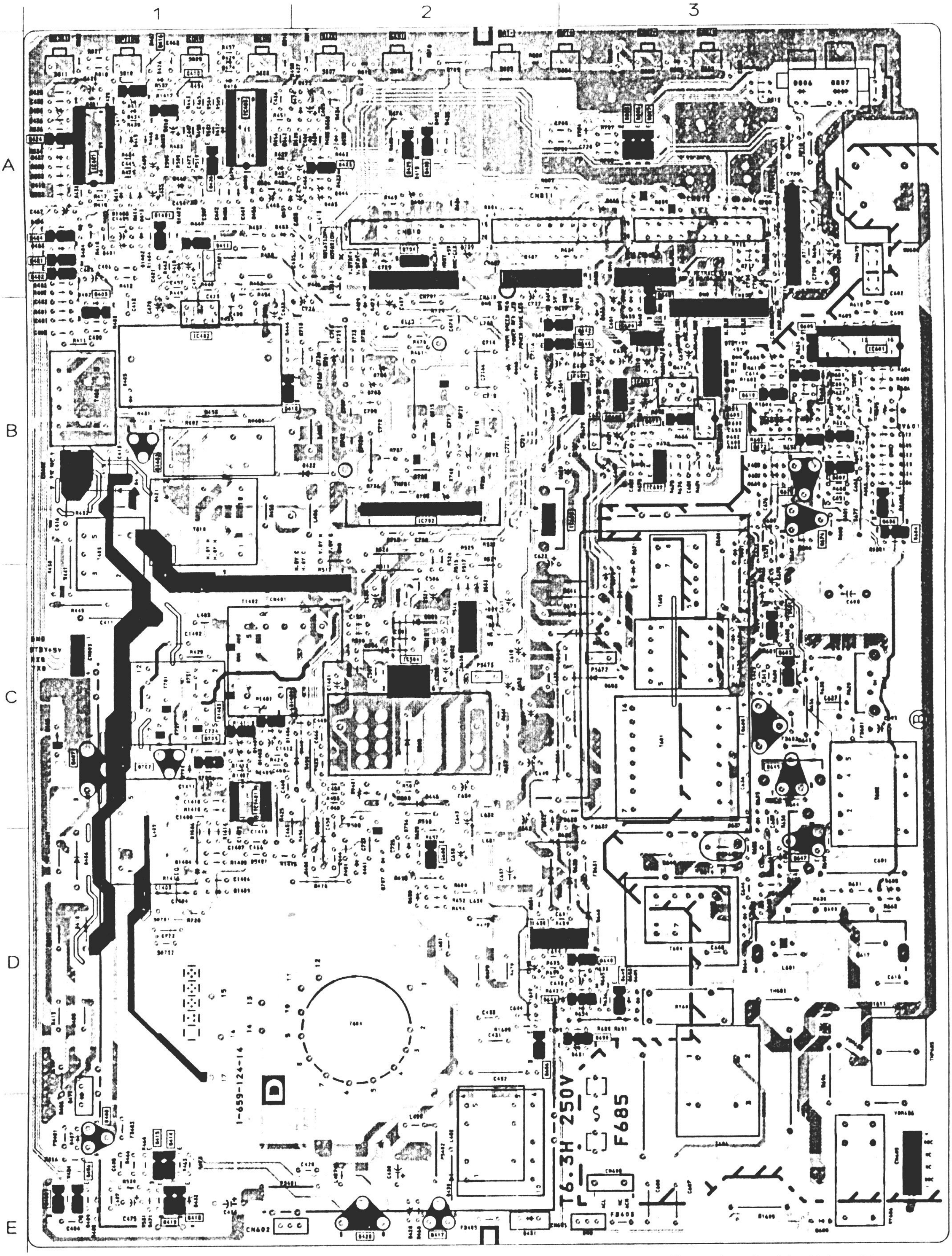
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

	Part replaced (⋈)
HV ADJ	RV401

	Part replaced (◪)	
HV Regulator Circuit	D board	IC401, IC403, RV401, FBT (T404), D425, R423, R460, R461, R462, R493 • Mounted D board
HV Hold-Down Circuit	D board	IC401, D439, D442, D443, D444, R422, R435, R448, R490 • Mounted D board
Beam Current Protector Circuit	D board	IC401, D429, D445, R435, R470, R472, R487, R491, R497, R501, R503, R508 • Mounted D board

- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- * : Can not be measured.
- Circled numbers are waveform references.
- ━━━ : B + bus.
- ━ ━ ━ : B – bus.

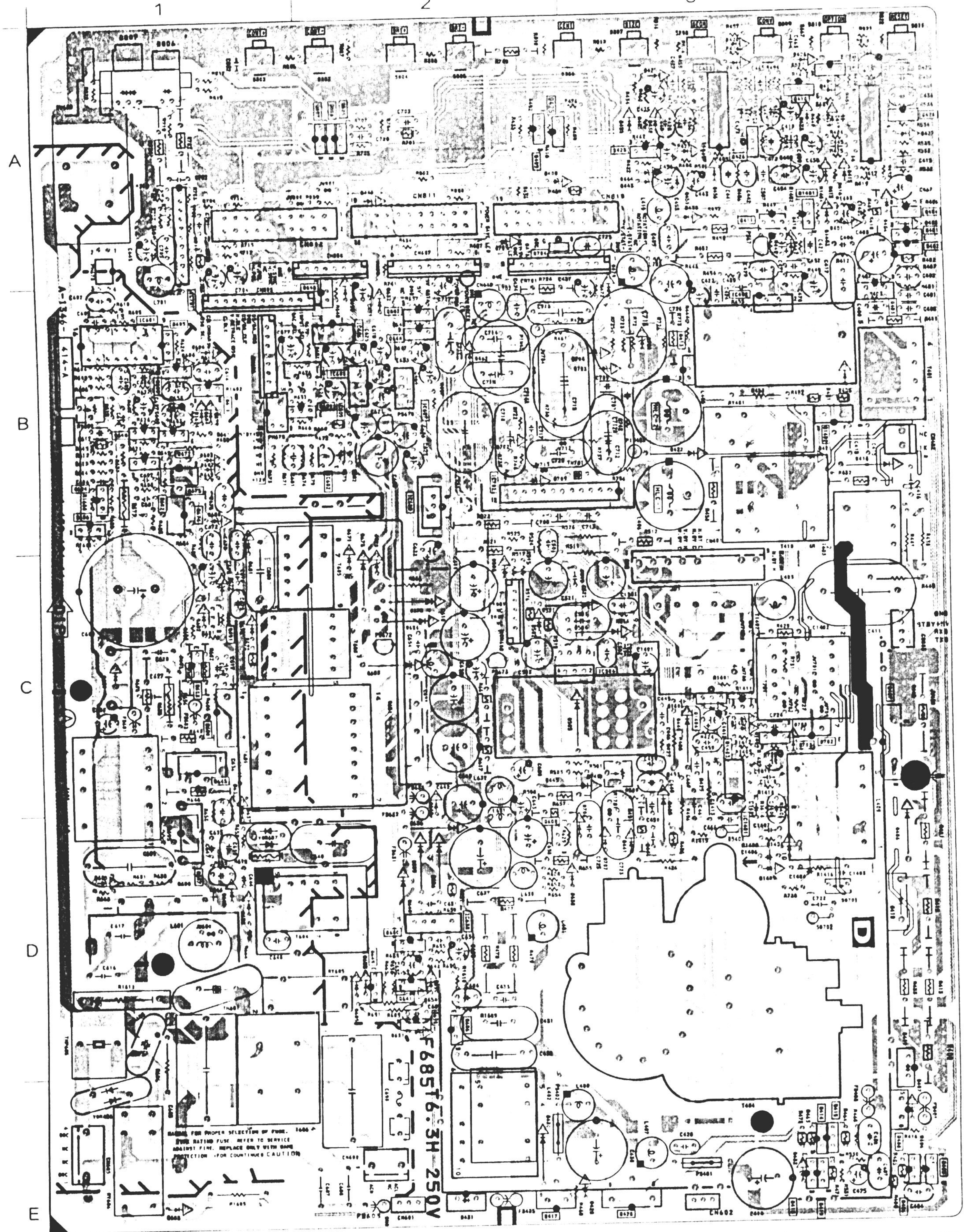
— D BOARD (Conductor side) —


1
2
3
A
B
C
D
E
IC402
IC702
T601
T604
1-659-124-14
D
T6.3H 250V
F685
CN602
CN811
CN810
STBY+5V

- : Pattern from the side which enables seeing
- : Pattern of the rear side.

D POWER SUPPLY, HV REG
HV PROT, H-CENTER
D-FOCUS, H-OUT, V-OUT

— D BOARD (Component side) —


1
2
3
A
B
C
D
E
F 6.3H 250V
CN602
D

• : Pattern from the side which enables seeing

• : Pattern of the rear side.

(1) Schematic Diagram of D Board

● D BOARD SEMICONDUCTOR LOCATION

IC

	(Conductor Side)	(Component Side)
IC401	A–1	A–3
IC402	B–1	B–3
IC403	A–1	A–3
IC504	C–2	C–3
IC601	B–3	B–1
IC602	B–3	B–1
IC603	B–3	B–2
IC606	B–3	B–2
IC607	B–3	B–2
IC608	B–2	B–2
IC609	B–3	B–2
IC630	D–2	D–2
IC701	A–3	A–1
IC702	B–2	B–2
IC1401	C–1	C–3

TRANSISTOR

	(Conductor Side)	(Component Side)
Q401	A–1	A–3
Q402	A–1	A–3
Q403	B–1	B–3
Q404	A–1	A–3
Q405	E–1	E–3
Q406	E–1	E–3
Q407	C–1	C–3
Q408	E–1	E–3
Q409	A–2	A–2
Q410	A–1	A–3
Q411	A–1	A–3
Q413	B–1	B–3
Q414	E–1	E–3
Q415	E–1	E–3
Q416	A–1	A–3
Q417	E–2	E–1
Q418	E–1	E–3
Q419	E–1	E–3
Q420	E–2	E–3
Q423	A–2	A–3
Q424	A–1	A–3
Q425	A–2	A–2
Q426	A–1	A–3
Q600	C–3	C–1
Q601	C–3	C–1
Q602	B–3	B–1
Q603	C–3	C–1
Q604	B–3	B–1
Q605	B–3	B–1
Q606	B–3	B–1
Q608	D–2	D–2
Q609	B–3	B–1
Q610	B–3	B–1
Q640	D–3	D–2

D418	A–1	A–3
D419	A–1	A–3
D420	A–1	A–3
D421	A–1	B–3
D422	B–2	B–3
D423	A–1	A–3
D424	A–2	A–3
D425	A–2	A–3
D426	A–1	A–3
D427	A–1	A–3
D428	E–2	E–3
D429	B–2	B–3
D430	E–2	E–2
D431	E–2	E–2
D432	E–1	E–3
D433	A–1	A–3
D434	A–1	A–3
D438	A–2	A–3
D439	D–2	C–3
D440	C–1	C–3
D441	D–2	D–3
D442	B–2	B–2
D443	A–2	A–3
D444	A–2	A–3
D445	C–2	C–3
D446	A–3	A–2
D448	A–1	A–3
D451	A–1	A–3
D454	A–1	A–3
D455	A–2	A–3
D456	A–1	A–3
D457	A–1	A–3
D501	C–2	C–2
D502	C–2	C–2
D503	C–2	C–2
D504	C–2	C–3
D505	C–2	C–3
D600	D–3	D–1
D601	C–3	C–1
D602	C–3	C–1
D603	C–3	C–2
D604	C–3	C–2
D605	D–3	D–1
D606	B–3	B–1
D631	D–2	D–2
D632	B–3	B–2
D634	D–2	D–2
D635	C–3	C–1
D636	D–2	D–2
D637	D–3	D–1
D638	D–2	D–2
D639	D–3	D–2
D640	D–3	D–2
D642	C–2	C–2
D648	D–3	D–1
D650	D–3	D–1
D651	C–3	C–2

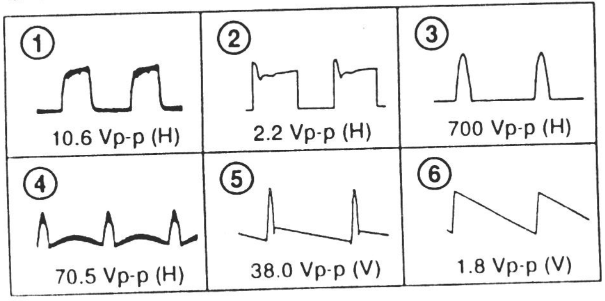
● D BOARD VOLTAGE LIST

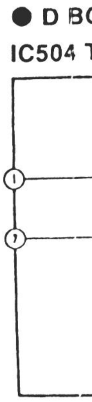
Ref.	Pin No.	Voltage [V]
IC401	1	9.1
	2	9.9
	4	3.2
	5	7.5
	6	5.3
	7	7.5
	8	4.3
	9	5.0
	10	4.7
	11	7.4
	13	9.1
	14	10.8
IC402	1	42.0
	2	42.0
	3	34.7
	4	41.6
IC403	1	5.2
	2	6.2
	3	6.2
	5	6.4
	6	6.4
	7	6.5
	8	4.7
	9	5.0
	10	5.0
	12	8.7
	13	8.7
	14	8.7
IC504	1	0.9
	3	–13.6
	4	–14.2
	5	0.3
	6	13.5
	7	0.9
IC601	1	2.5
	2	2.5
	3	2.5
	4	0.5
	5	1.5
	6	3.3
	8	12.0
	9	3.2
	10	3.2
	11	11.9
	12	10.9
	13	4.9
	14	4.9
	15	4.9
	16	0
IC602	1	2.5
	3	13.7
IC603	1	0
	2	2.5
	3	6.2
	4	5.0
	5	7.4
IC606	IN	7.8
	OUT	5.0
IC607	IN	–14.8
	OUT	–5.0
IC608	IN	14.7
	OUT	12.0
IC609	IN	12.0
	OUT	5.0
IC630	1	179.8
	3	13.9
	4	0
IC701	1	–0.7
	2	–0.8
	3	1.5
	4	1.5
	6	1.8
	7	1.8
	8	–0.2
	9	–0.2
	10	14.6
IC702	2	4.0
	3	0
	4	4.0
	5	0
	6	3.9
	7	0
	8	3.9
	9	0
	10	3.9
	11	0
IC1401	1	10.3

Ref.	Pin No.	Voltage [V]
Q411	B	0.5
	C	38.0
	E	0
Q413	B	0.7
	C	0.2
Q414	B	9.1
	E	8.9
Q415	B	9.1
	E	8.9
Q416	B	0
	C	7.5
Q417	G	178.9
	D	42.0
	S	179.9
Q418	B	9.9
	E	9.8
Q419	B	9.9
	E	9.8
Q420	G	9.9
	D	42.0
Q423	B	7.5
	E	8.3
Q424	B	10.3
	C	7.5
	E	10.9
Q425	B	4.8
	C	0
Q426	B	0
	C	5.2
	E	5.2
Q600	G	3.0
	D	91.2
	S	0
Q601	B	3.2
	C	0
	E	3.0
Q602	B	1.2
	C	–0.6
	E	2.0
Q603	B	0.1
	C	4.9
	E	0
Q604	B	5.6
	C	2.5
	E	4.9
Q605	B	1.0
	C	0.4
	E	0.4
Q606	B	4.9
	C	0.5
	E	4.9
Q608	B	180.0
	C	0
	E	180.1
Q609	B	1.6
	C	0
	E	1.5
Q610	B	0
	C	1.5
	E	0
Q640	B	14.0
	E	13.9
Q641	B	0.2
	C	14.0
Q642	B	1.2
	C	0
	E	1.2
Q643	B	0.7
	C	0.1
Q644	B	0
	C	1.2
Q645	B	201.0
	C	396.0
	E	202.1
Q647	B	–0.6
	C	202.1
	E	0

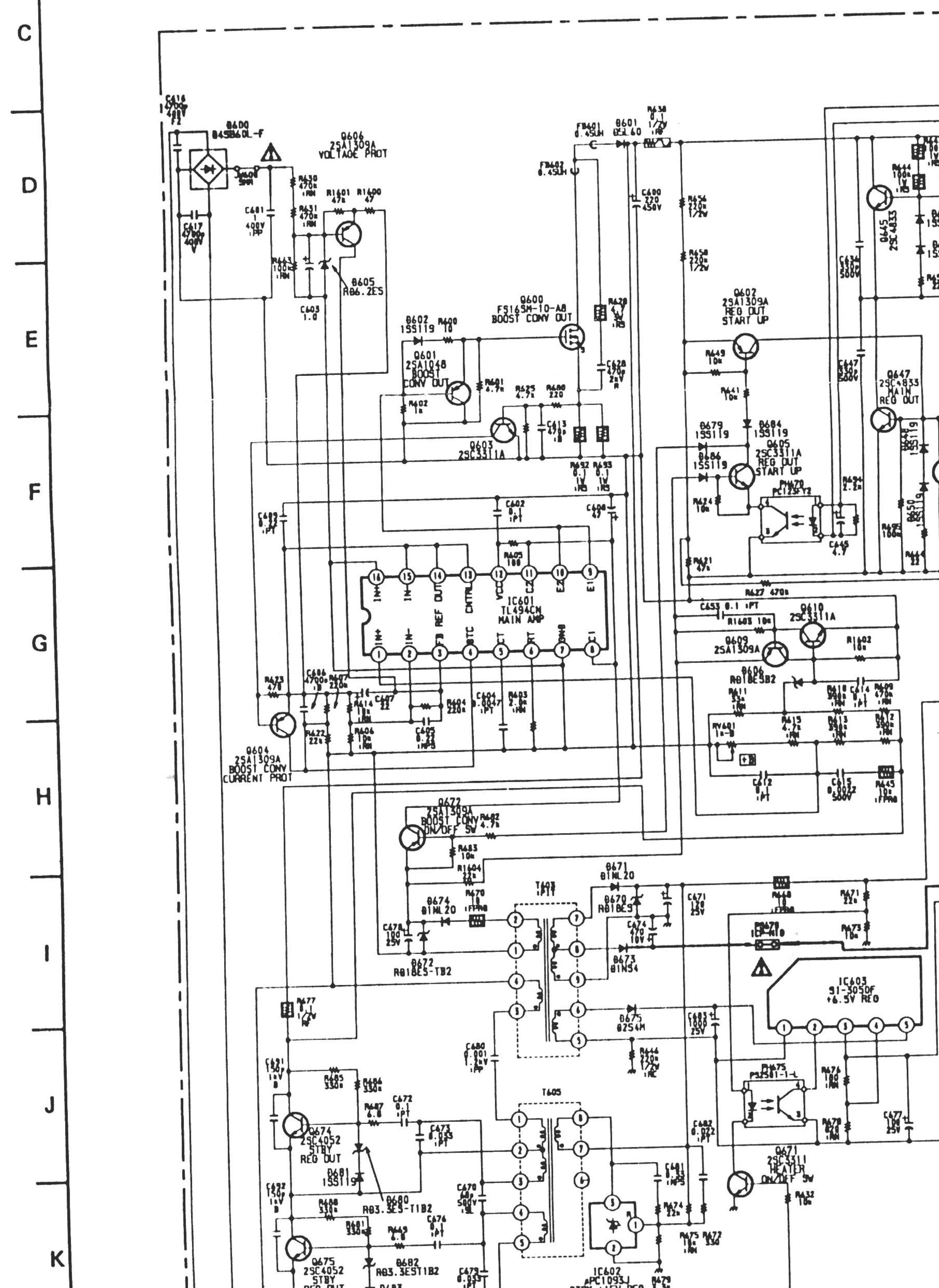
e [V]
5 .0
7 2
1 9
1 9
0 5
8.9 2.0 9.9
.9 .8
.9 .8
.9 2.0
7.5 3.3
0.3 7.5 0.9
4.8 0
0 5.2 5.2
3.0 91.2 0
3.2 0 3.0
1.2 –0.6 2.0
0.1 4.9 0
5.6 2.5 4.9
1.0 0.4 0.4
4.9 0.5 4.9
180.0 0 180.1
1.6 0 1.5
0 1.5 0
14.0 13.9
0.2 14.0
1.2 0 1.2
0.7 0.1
0 1.2
201.0 396.0 202.1
–0.6

● D BOARD WAVEFORMS





● D BO
IC504 T
①
⑦



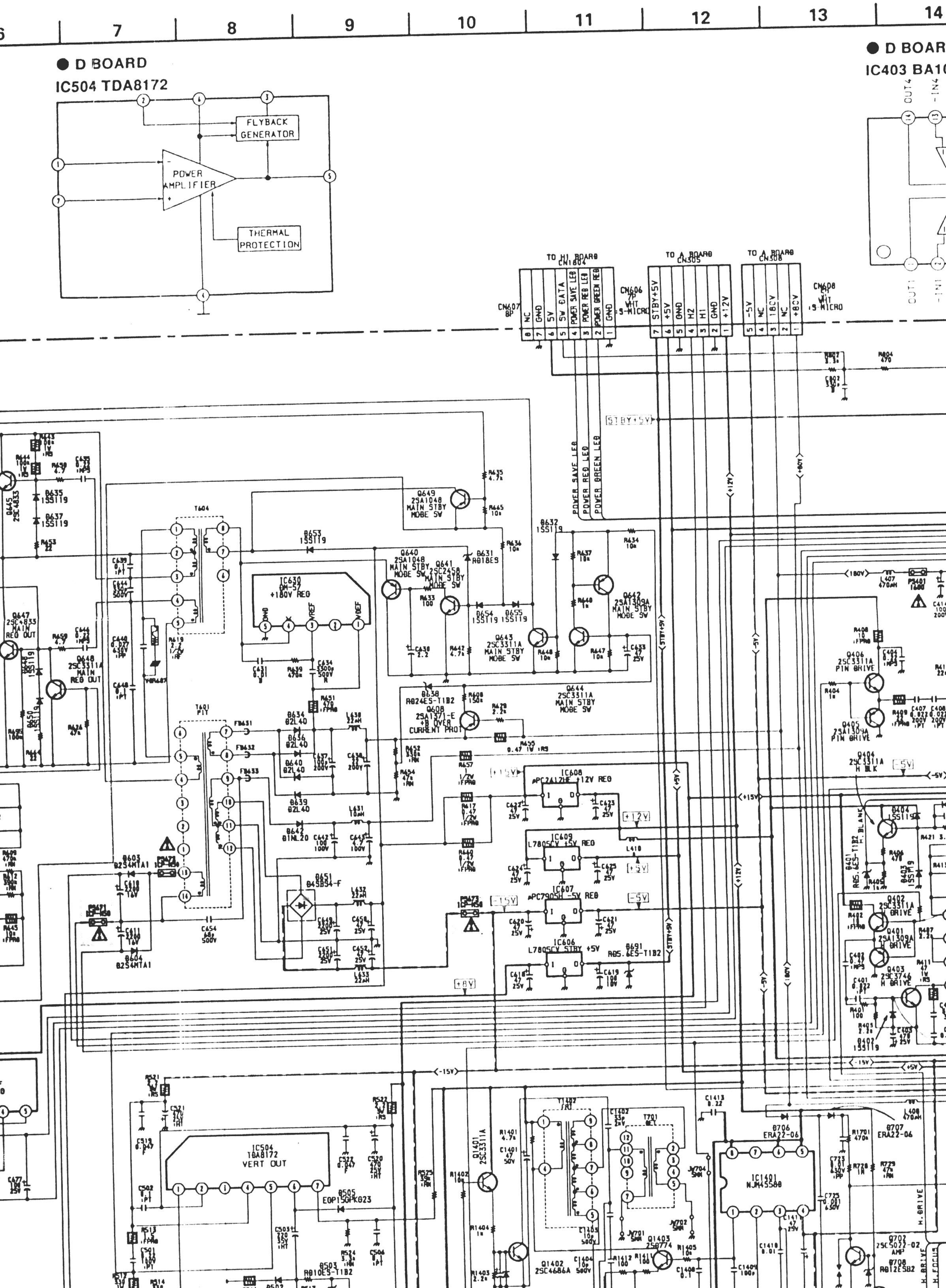
1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
C616 4700p 400V F2
C617 4700p 400V
D600 D4SB60L-F
R600 5MΩ
C601 1 400V PP
Q606 2SA1309A VOLTAGE PROT
R430 470k
R431 470k
R1601 47k
R1600 47
R463 100k
D605 RD6.2ES
C603 1.0
FB401 0.45UH
D601 ERL60
R638 0.1 1/2W
FB402 0.45UH
C600 220 450V
R454 220k 1/2W
R458 220k 1/2W
Q600 FS16SM-10-A8 BOOST CONV OUT
D602 1SS119
R400 10
Q601 2SA1048 BOOST CONV OUT
R401 4.7k
R425 4.7k
R480 220
R402 1k
C628 470p 2kV
R428
C613 470p
Q603 2SC3311A
R492 0.1 1W
R493 0.1 1W
C602 0.1
C608 47
R405 100
IC601 TL494CN MAIN AMP
IN+
IN-
FB REF
DTC
CT
RT
GND
C1
VCC
C2
E2
E1
OUT CNTRL
C605 0.1
R473 470
C606 4700p
R407 220k
R414 10k
C607 22
R404 220k
C604 0.0047
R403 2.2k
R422 22k
R406 10k
C605 0.22
Q604 2SA1309A BOOST CONV CURRENT PROT
Q602 2SA1309A REG OUT START UP
R449 10k
R441 10k
D679 1SS119
D684 1SS119
D686 1SS119
Q605 2SC3311A REG OUT START UP
PH470 PC123FY2
R424 10k
R421 47k
R427 470k
C645 4.7
R494 2.2k
C653 0.1
R1603 10k
Q610 2SC3311A
Q609 2SA1309A
R1602 10k
D606 RD18ESB2
R411 33k
RV401 1k-B
R415 4.7k
R413 390k
R412 390k
R410 390k
C414 0.1
R409 470k
C612 0.1
C615 0.0022 500V
R645 10k
R443 10k
R444 10k
R459 4.7
C433 0.22
Q645 2SC4833
D635 1SS119
D637 1SS119
R453 22
C634 330p 500V
C647 330p 500V
Q647 2SC4833 MAIN REG OUT
R458 4.7
C644 0.22
D648 1SS119
Q648 2SC3311A MAIN REG OUT
D650 1SS119
R426 47k
R466 22
Q672 2SA1309A BOOST CONV ON/OFF SW
R482 4.7k
R483 10k
R1604 22k
D674 01NL20
R470
C478 100 25V
D672 RD18ES-TB2
T603 FT
D671 01NL20
D670 RD18ES
C474 470 10V
D673 01NS4
C471 120 25V
R468
R471 22k
PS479 ICP-N10
R473 10k
IC603 SI-3050F +6.5V REG
D675 02S4M
R466 220k 1/2W
C480 0.001 1.5kV
C483 1000 25V
PH475 PS2501-1-L
R476 180
R478 82k
C477 10 25V
C482 0.022
Q671 2SC3311 HEATER ON/OFF SW
R432 10k
R477 1/2W
C491 150p 1kV
R485 330k
R484 330k
R487 6.8
C672 0.1
C473 0.033
Q674 2SC4052 STBY REG OUT
D681 1SS119
D680 RD3.3ES-T1B2
T605
C670 68p 500V
C481 0.033
R474 22k
C492 150p 1kV
R488 330k
R481 330k
R445 6.8
C474 0.1
Q675 2SC4052 STBY REG OUT
D682 RD3.3ES-T1B2
C479 0.033
IC602 μPC1093J
R475 10k
R472 330
R479

● D BOARD

IC504 TDA8172

● D BOAR

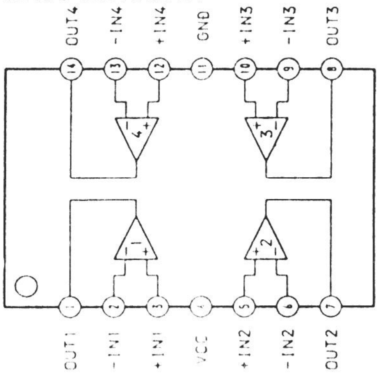
IC403 BA1


6
7
8
9
10
11
12
13
14
FLYBACK GENERATOR
POWER AMPLIFIER
THERMAL PROTECTION
OUT4
-IN4
OUT1
-IN1
TO H1 BOARD CN1604
TO A BOARD CN305
TO A BOARD CN308
CN607 8P
CN606 7P WHT S-MICRO
CN608 5P WHT S-MICRO
NC
GND
5V
5V DATA
POWER SAVE LED
POWER RED LED
POWER GREEN LED
STBY+5V
+5V
H2
H1
+12V
-5V
180V
+80V
POWER SAVE LED
POWER RED LED
POWER GREEN LED
STBY+5V
T604
T601 FBT
IC630 DM-57 +180V REG
GND
VREF
VDEF
Q649 2SA1048 MAIN STBY MODE 5V
Q640 2SA1048 MAIN STBY MODE 5V
Q641 2SC2458 MAIN STBY MODE 5V
Q642 2SA1309A MAIN STBY MODE 5V
Q643 2SC3311A MAIN STBY MODE 5V
Q644 2SC3311A MAIN STBY MODE 5V
Q645 2SC4833
Q647 2SC4833 MAIN REG OUT
Q648 2SC3311A MAIN REG OUT
Q608 2SA1371-E +B OVER CURRENT PROT
D631 RD18ES
D638 RD24ES-T1B2
D651 D4SB4-F
D691 RD5.6ES-T1B2
IC608 μPC2412HF +12V REG
IC609 L7805CV +5V REG
IC607 μPC7905H -5V REG
IC606 L7805CV STBY +5V
D603 D2S4MTA1
D604 D2S4MTA1
+15V
+12V
+5V
-15V
-5V
+8V
IC504 TDA8172 VERT OUT
D505 EGP15GPK023
D503 RD10ES-T1B2
Q1401 2SC3311A
Q1402 2SC4686A 500V
Q1403 2SB774
T1402 SRT
T701 HCT
IC1401 NJM4558D
D706 ERA22-06
D707 ERA22-06
Q702 2SC5022-02 AMP
D708 RD12ESB2
H.DRIVE
H.FOCUS
H.BLANK
L407 470μH
L408 470μH
Q406 2SC3311A PIN DRIVE
Q405 2SA1309A PIN DRIVE
Q404 2SC3311A H BLK
D404 1SS119
D403 1SS119
D401 RD5.6ES-T1B2
Q402 2SC3311A DRIVE
Q401 2SA1309A DRIVE
Q403 2SC3746 H DRIVE
D407 1SS119

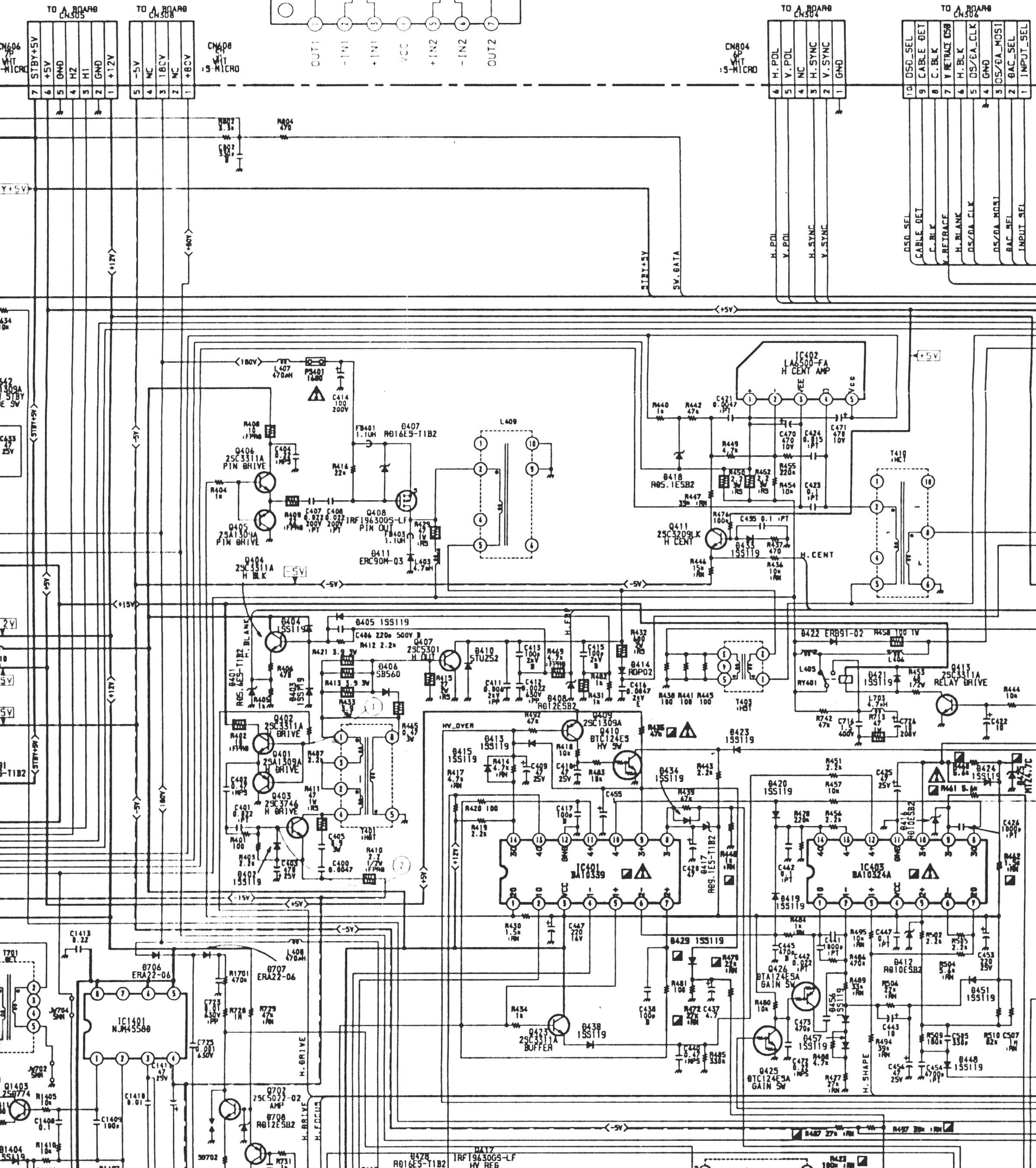
12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

● D BOARD

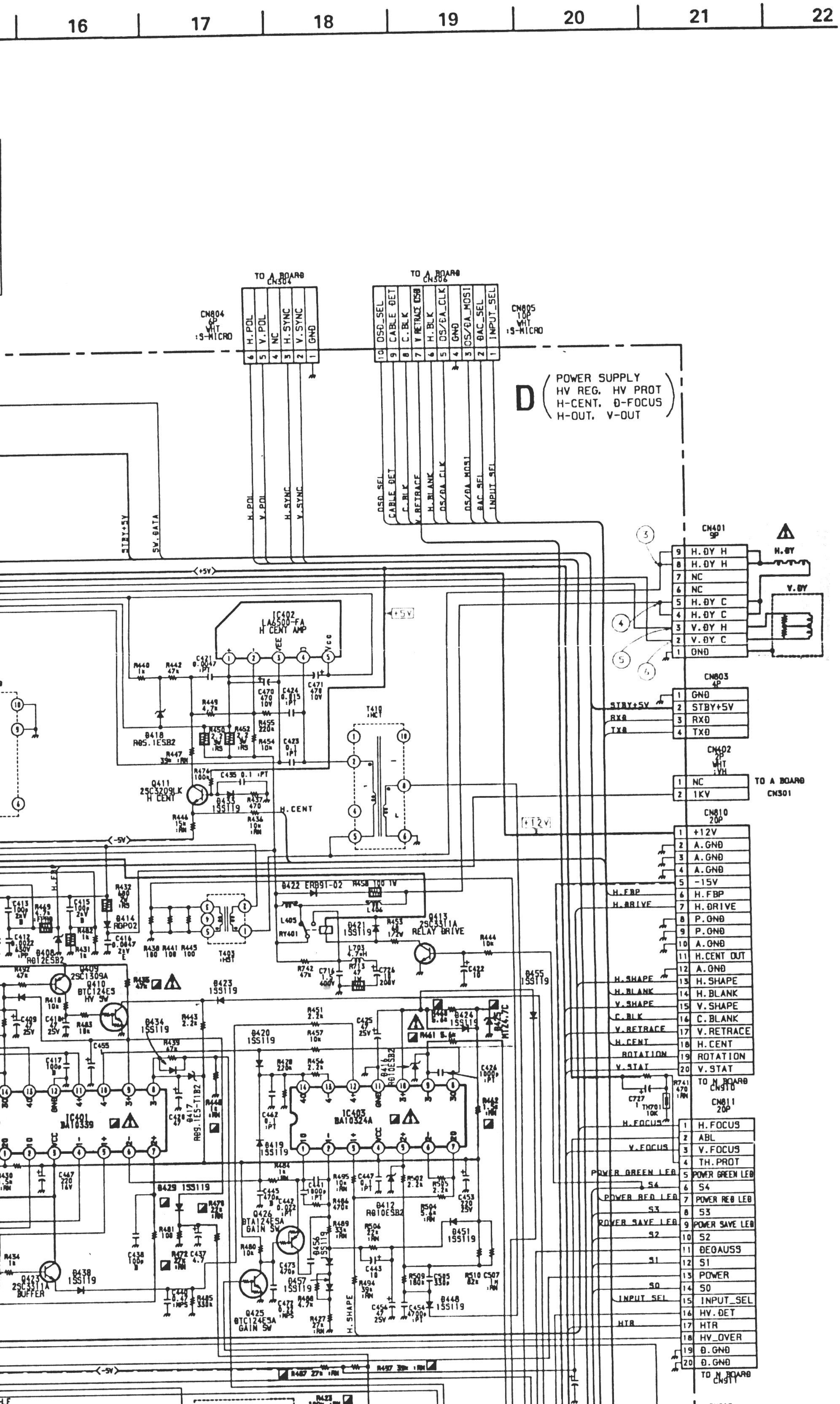
IC403 BA10324A



OUT4
-IN4
+IN4
GND
+IN3
-IN3
OUT3
14
13
12
11
10
9
8
1
2
3
4
5
6
7
OUT1
-IN1
+IN1
VCC
+IN2
-IN2
OUT2



TO A BOARD CN305
CN606 7P WHT :S-MICRO
STBY+5V
+5V
GND
H2
H1
GND
+12V
TO A BOARD CN308
-5V
NC
180V
NC
+80V
CN608 5P WHT :S-MICRO
TO A BOARD CN304
CN804 6P WHT :S-MICRO
H.POL
V.POL
NC
H.SYNC
V.SYNC
GND
TO A BOARD CN306
OSD_SEL
CABLE_DET
C.BLK
V RETRACE
H.BLK
OS/EA_CLK
GND
OS/EA_MOSI
BAC_SEL
INPUT_SEL
R802 3.3k
R804 470
C802 330p
STBY+5V
SW.DATA
H.POL
V.POL
H.SYNC
V.SYNC
OSD_SEL
CABLE_DET
C.BLK
V.RETRACE
H.BLANK
OS/EA_CLK
OS/EA_MOSI
BAC_SEL
INPUT_SEL
(+5V)
(180V)
L407 470μH
PS401 1.6A
C414 100 200V
FB401 1.1UH
Q407 RD16ES-T1B2
L409
IC402 LA6500-FA H CENT AMP
R440 1k
R442 47k
C421 0.0047
C470 470 10V
C424 0.015
C471 470 10V
R449 4.7k
R455 220k
R454 10k
D418 RD5.1ESB2
R447 39k
Q411 2SC3209LK H CENT
D433 1SS119
R437 470
R436 10k
R446 15k
H.CENT
T410 HCT
Q406 2SC3311A PIN DRIVE
Q405 2SA1309A PIN DRIVE
R404 1k
R408 10
R414 22k
C407 0.022 200V
C408 0.022 200V
Q408 IRF19630GS-LF PIN OUT
FB403 1.1UH
D411 ERC90M-03
L403 4.7mH
Q404 2SC3311A H BLK
(-5V)
(+15V)
(+12V)
(-5V)
D404 1SS119
D405 1SS119
C486 220p 500V
R412 2.2k
Q407 2SC5301 H OUT
D410 STUZ52
D406 SB560
R421 3.9 3W
R413 3.9 3W
C411 0.006 2kV
C412 0.0022 450V
C413 100p 2kV
R415
D408 RD12ESB2
C415 100p 2kV
R431
R432
D414 RDP02
C416 0.0047 2kV
R438 100
R441 100
R445 100
T403 HST
D422 ERB91-02
R458 100 1W
L406
L405
RY401
D421 1SS119
R453 47 1/2W
Q413 2SC3311A RELAY DRIVE
L703 4.7mH
R742 47k
C716 1 400V
R713
C726 200V
R444 10k
C422 10
D401 RD5.6ES-T1B2
H.BLANK
D403 1SS119
R406 470
R405 1k
Q402 2SC3311A DRIVE
Q401 2SA1309A DRIVE
Q403 2SC3746 H DRIVE
R402
C402 0.47
C401 0.022
R401 100
R405 2.2k
C403 470 25V
D402 1SS119
R407 2.2
R411 47 1W
T401 HDT
C405
C409 0.0047
R410 2.2 1/2W
R445 0.47 3W
HV_OVER
Q409 2SC1309A
Q410 BTC124ES HV SW
R492 47k
D413 1SS119
D415 1SS119
R414 4.7k
R417 4.7k
C409 47 25V
R418 10k
C418 47 25V
R483 10k
R426 47k
D423 1SS119
D434 1SS119
R443 2.2k
R439 47k
C455
R420 100
R419 2.2k
C417 100p
IC401 BA10339
C420 47
D417 RD9.1ES-T1B2
R448
R430 1.5k
C447 220 16V
Q435 2SC3311A BUFFER
R434 1k
D438 1SS119
D429 1SS119
R481 100
R479 22k
R472 22k
C437 4.7
C438 100p
C440 0.47
R485 330k
D420 1SS119
R451 2.2k
R457 10k
R428 220k
R456 2.2k
C425 47 25V
D424 1SS119
D416 RD10ESB2
IC405 BA10324A
C426 1000p
R462 1.2k
C442 0.1
D419 1SS119
R484 1k
C445 470p
C442 0.022
Q426 BTA124ESA GAIN SW
R480 10k
Q425 BTC124ESA GAIN SW
C473 470p
Q457 1SS119
C472 0.47
R488 4.7k
D456 1SS119
R477 27k
R495 10k
R494 470k
R489 33k
C447 0.1
R502 2.2k
R505 2.2k
C453 220 25V
D412 RD10ESB2
R504 5.6k
R506 22k
D451 1SS119
R494 39k
C443 10
R509 180k
C585 330p
R510 82k
C507
D448 1SS119
C454 47 25V
C454 4700p
H.SHAPE
R487 27k
R497 39k
R423 180k
R461 5.6k
C1413 0.22
T701 BEL
D706 ERA22-06
D707 ERA22-06
L408 470mH
R1701 470k
C723 0.01 630V
R728 1M
R729 47k
C725 0.001 630V
IC1401 NJM4558D
JW704 5MM
JW702 5MM
Q1403 2SD774
R1405
C1408 0.1
C1409 100p
C1410 0.01
C1411 47 25V
D1404 1SS119
R1410 10k
Q702 2SC5022-02 AMP
D708 RD12ESB2
Q703
R731
H.DRIVE
H.FOCUS
H.DRIVE
D428 RD16ES-T1B2
Q427 IRF19630GS-LF HV REG


16
17
18
19
20
21
22
TO A BOARD CN304
H.POL
V.POL
NC
H.SYNC
V.SYNC
GND
CN804 6P WHT :S-MICRO
TO A BOARD CN306
OSD_SEL
CABLE_DET
C.BLK
V.RETRACE OSD
H.BLK
DS/EA_CLK
GND
DS/EA_MOSI
BAC_SEL
INPUT_SEL
CN805 10P WHT :S-MICRO
D
POWER SUPPLY
HV REG. HV PROT
H-CENT. D-FOCUS
H-OUT. V-OUT
STBY+5V
SW.DATA
+5V
IC402 LA6500-FA H CENT AMP
VEE
Vcc
CN401 9P
H.DY H
H.DY H
NC
NC
H.DY C
H.DY C
V.DY H
V.DY C
GND
H.DY
V.DY
CN803 4P
GND
STBY+5V
RXD
TXD
CN402 2P WHT :VH
NC
1KV
TO A BOARD CN301
T410 :HCT
Q411 2SC3209LK H CENT
D418 RD5.1ESB2
H.CENT
+12V
-5V
CN810 20P
+12V
A.GND
A.GND
A.GND
-15V
H.FBP
H.DRIVE
P.GND
P.GND
A.GND
H.CENT OUT
A.GND
H.SHAPE
H.BLANK
V.SHAPE
C.BLANK
V.RETRACE
H.CENT
ROTATION
V.STAT
TO N BOARD CN910
D422 ERB91-02
RY401
L405
Q413 2SC3311A RELAY DRIVE
D421 1SS119
L703 4.7uH
T403 :HST
Q409 2SC1309A
Q410 DTC124ES HV 5V
D414 RD6P02
D408 RD12ESB2
D423 1SS119
D455 1SS119
D434 1SS119
IC401 BA10339
D417 RD9.1ES-T1B2
D420 1SS119
IC403 BA10324A
D416 RD10ESB2
D424 1SS119
D425 MTZ4.7C
D419 1SS119
D429 1SS119
Q426 DTA124ESA GAIN 5V
Q425 DTC124ESA GAIN 5V
D412 RD10ESB2
D451 1SS119
D457 1SS119
D448 1SS119
Q423 2SC3311A BUFFER
D438 1SS119
H.SHAPE
TH701 10K
C727
R741 470
CN811 20P
H.FOCUS
ABL
V.FOCUS
TH.PROT
POWER GREEN LED
S4
POWER RED LED
S3
POWER SAVE LED
S2
DEGAUSS
S1
POWER
S0
INPUT_SEL
HV.DET
HTR
HV_OVER
D.GND
D.GND
TO N BOARD CN911
R487 27k
R497 39k

IC701	A–3	A–1
IC702	B–2	B–2
IC1401	C–1	C–3

TRANSISTOR

	(Conductor Side)	(Component Side)
Q401	A–1	A–3
Q402	A–1	A–3
Q403	B–1	B–3
Q404	A–1	A–3
Q405	E–1	E–3
Q406	E–1	E–3
Q407	C–1	C–3
Q408	E–1	E–3
Q409	A–2	A–2
Q410	A–1	A–3
Q411	A–1	A–3
Q413	B–1	B–3
Q414	E–1	E–3
Q415	E–1	E–3
Q416	A–1	A–3
Q417	E–2	E–1
Q418	E–1	E–3
Q419	E–1	E–3
Q420	E–2	E–3
Q423	A–2	A–3
Q424	A–1	A–3
Q425	A–2	A–2
Q426	A–1	A–3
Q600	C–3	C–1
Q601	C–3	C–1
Q602	B–3	B–1
Q603	C–3	C–1
Q604	B–3	B–1
Q605	B–3	B–1
Q606	B–3	B–1
Q608	D–2	D–2
Q609	B–3	B–1
Q610	B–3	B–1
Q640	D–3	D–2
Q641	D–3	D–2
Q642	B–2	B–2
Q643	B–3	B–2
Q644	B–2	B–2
Q645	C–3	C–1
Q647	D–3	D–1
Q648	B–3	B–1
Q649	D–3	D–2
Q671	B–3	B–2
Q672	B–3	B–1
Q674	B–3	B–1
Q675	B–3	B–1
Q686	D–2	D–2
Q702	C–1	C–3
Q703	C–1	C–3
Q704	A–2	A–2
Q1401	A–1	A–3
Q1402	B–1	B–3
Q1403	C–1	C–3
Q1404	C–1	C–3

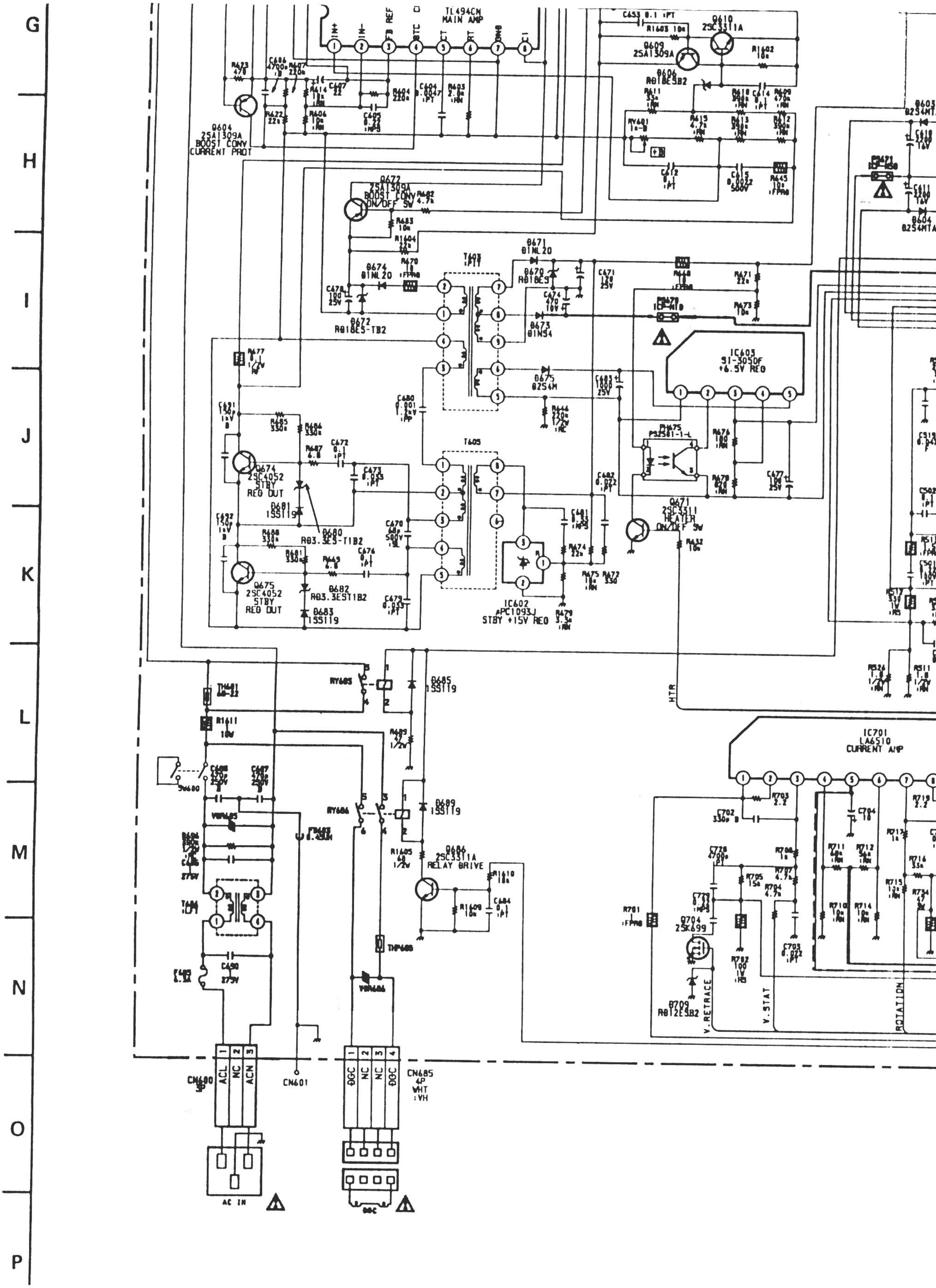
DIODE

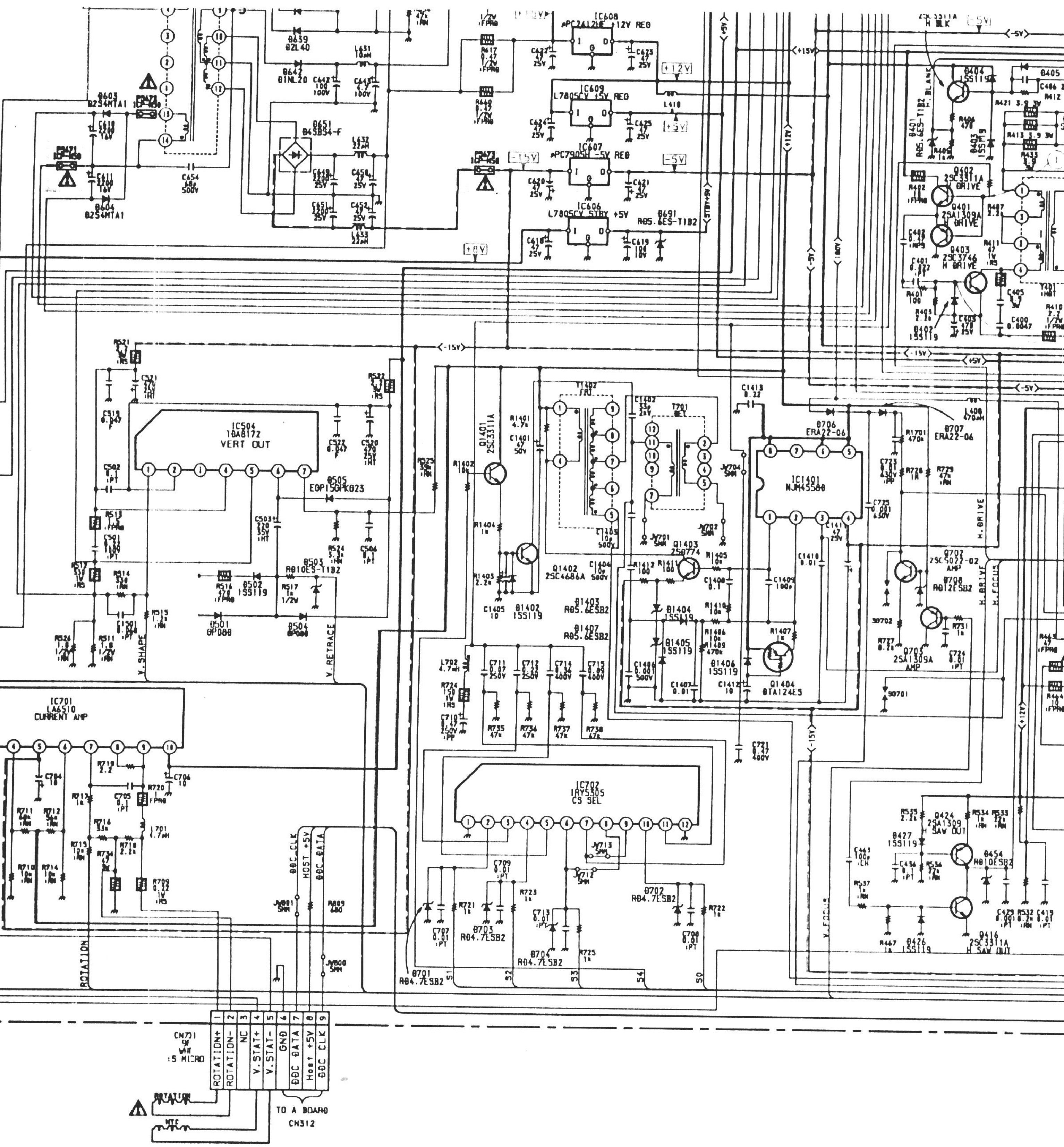
	(Conductor Side)	(Component Side)
D401	A–1	A–3
D402	B–1	B–3
D403	A–1	A–3
D404	A–1	A–3
D405	B–1	B–3
D406	D–1	D–3
D407	E–1	E–3
D408	A–2	A–2
D410	D–1	D–3
D411	E–1	D–3
D412	A–1	A–3
D413	A–1	A–3
D414	B–1	B–3
D415	A–1	A–3
D416	A–1	A–3
D417	A–1	A–3
D434	A–1	A–3
D438	A–2	A–3
D439	D–2	C–3
D440	C–1	C–3
D441	D–2	D–3
D442	B–2	B–2
D443	A–2	A–3
D444	A–2	A–3
D445	C–2	C–3
D446	A–3	A–2
D448	A–1	A–3
D451	A–1	A–3
D454	A–1	A–3
D455	A–2	A–3
D456	A–1	A–3
D457	A–1	A–3
D501	C–2	C–2
D502	C–2	C–2
D503	C–2	C–2
D504	C–2	C–3
D505	C–2	C–3
D600	D–3	D–1
D601	C–3	C–1
D602	C–3	C–1
D603	C–3	C–2
D604	C–3	C–2
D605	D–3	D–1
D606	B–3	B–1
D631	D–2	D–2
D632	B–3	B–2
D634	D–2	D–2
D635	C–3	C–1
D636	D–2	D–2
D637	D–3	D–1
D638	D–2	D–2
D639	D–3	D–2
D640	D–3	D–2
D642	C–2	C–2
D648	D–3	D–1
D650	D–3	D–1
D651	C–3	C–2
D653	D–3	D–2
D654	D–3	D–2
D655	B–3	B–2
D670	C–3	C–2
D671	B–3	C–2
D672	C–3	C–1
D673	C–3	C–1
D674	C–3	C–1
D675	C–3	C–2
D679	B–3	B–1
D680	B–3	B–1
D681	B–3	B–1
D682	B–3	B–1
D683	B–3	B–1
D684	B–3	B–1
D685	D–3	D–2
D686	B–3	B–1
D689	E–3	E–1
D691	B–3	B–2
D701	B–2	B–3
D702	B–2	B–2
D703	B–2	B–3
D704	B–2	B–3
D706	D–2	D–3
D707	D–2	D–3
D708	C–1	C–3
D1402	A–1	A–3
D1403	C–1	C–3
D1404	D–1	D–3
D1405	D–1	D–3
D1406	C–1	C–3
D1407	C–1	C–3

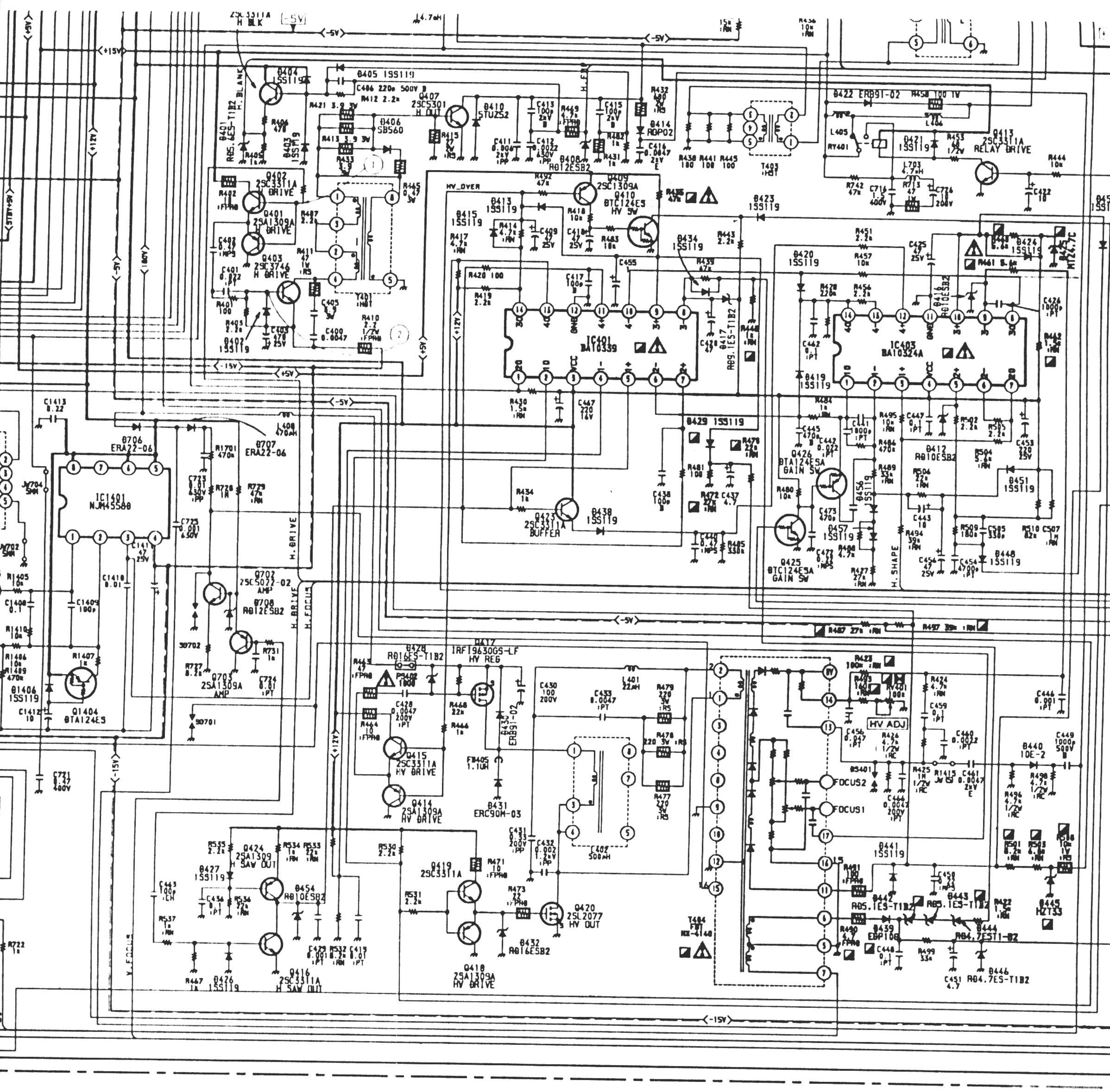
VARIABLE RESISTOR

	(Conductor Side)	(Component Side)
RV401	C–2	C–3
RV601	B–3	B–1

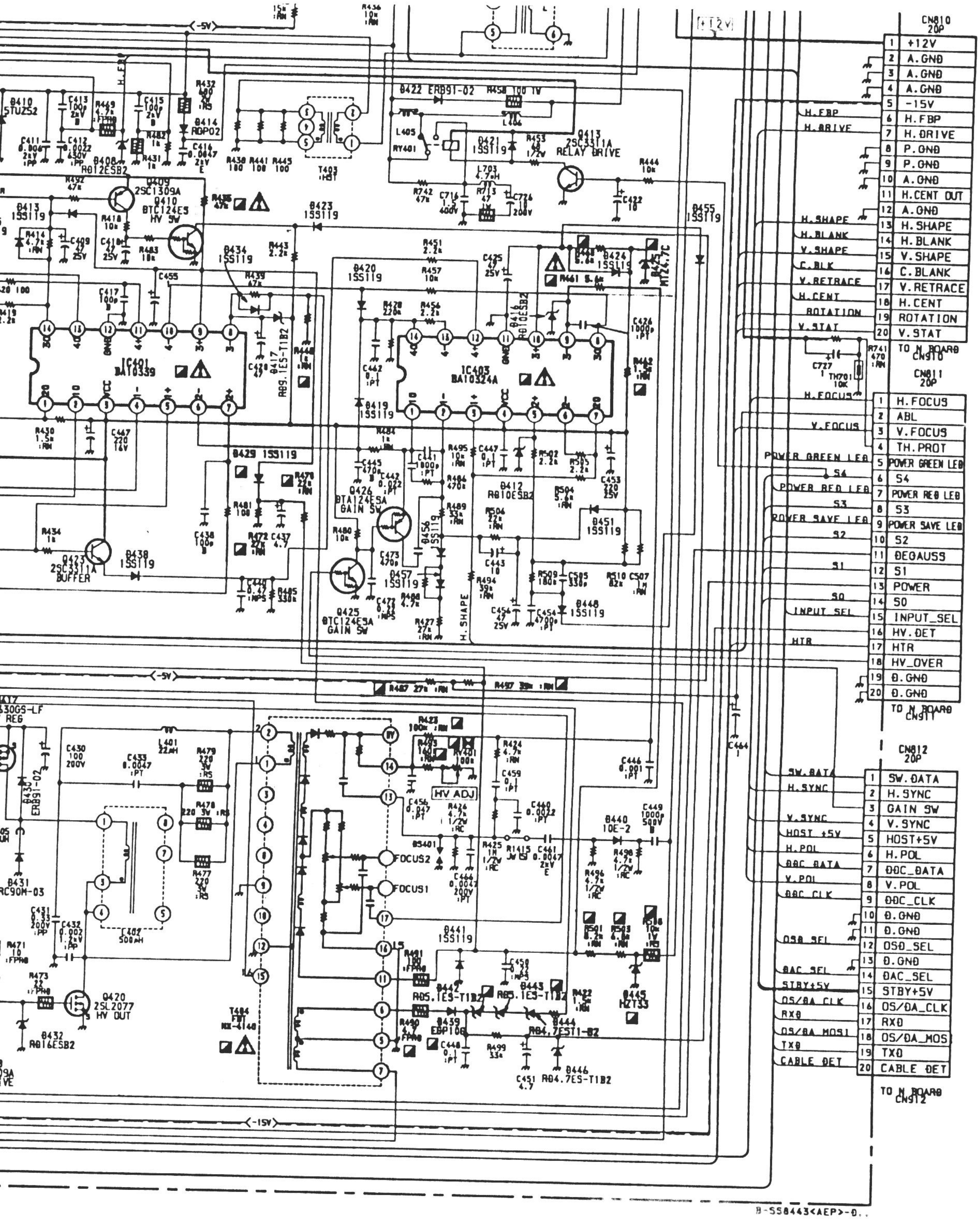
	3	13.7
IC603	1	0
	2	2.5
	3	6.2
	4	5.0
	5	7.4
IC606	IN	7.8
	OUT	5.0
IC607	IN	–14.8
	OUT	–5.0
IC608	IN	14.7
	OUT	12.0
IC609	IN	12.0
	OUT	5.0
IC630	1	179.8
	3	13.9
	4	0
IC701	1	–0.7
	2	–0.8
	3	1.5
	4	1.5
	6	1.8
	7	1.8
	8	–0.2
	9	–0.2
	10	14.6
IC702	2	4.0
	3	0
	4	4.0
	5	0
	6	3.9
	7	0
	8	3.9
	9	0
	10	3.9
	11	0
IC1401	1	–10.3
	2	2.5
	3	2.5
PH670	1	1.2
	2	0.1
	3	0
	4	0.4
PH675	1	4.9
	2	4.5
	3	0
	4	2.6
Q401	B	5.2
	E	5.3
Q402	B	5.2
	C	14.4
	E	5.3
Q403	B	–14.3
	C	–0.2
	E	–14.2
Q404	B	0.5
	C	0.8
Q405	B	9.1
	E	8.7
Q406	B	9.1
	E	8.7
Q407	B	–1.0
	C	42.3
Q408	G	178.3
	D	43.3
	S	179.9
Q409	B	10.2
	C	0
Q410	B	0
	C	11.9
	E	0
	C	2.5
	E	4.9
Q605	B	1.0
	C	0.4
	E	0.4
Q606	B	4.9
	C	0.5
	E	4.9
Q608	B	180.0
	C	0
	E	180.1
Q609	B	1.6
	C	0
	E	1.5
Q610	B	0
	C	1.5
	E	0
Q640	B	14.0
	E	13.9
Q641	B	0.2
	C	14.0
Q642	B	1.2
	C	0
	E	1.2
Q643	B	0.7
	C	0.1
Q644	B	0
	C	1.2
Q645	B	201.0
	C	396.0
	E	202.1
Q647	B	–0.6
	C	202.1
	E	0
Q648	B	–0.7
	C	–0.6
	E	0
Q649	B	15.2
	C	15.9
	E	15.9
Q671	B	0
	C	4.4
Q672	B	11.3
	C	11.9
	E	12.1
Q674	B	191.0
	C	396.0
	E	194.3
Q675	B	–2.1
	C	194.3
	E	0
Q686	B	0
	C	14.8
Q702	B	3.2
	C	186.1
	E	2.7
Q703	B	2.7
	E	3.2
Q704	G	–0.6
	D	–0.1
Q1401	B	4.4
	E	3.8
Q1402	B	0.7
	C	0
Q1403	B	–10.5
	C	8.0
	E	–11.1
Q1404	B	11.8
	C	2.5

G
H
I
J
K
L
M
N
O
P
TL494CN MAIN AMP
Q604 2SA1309A BOOST CONV CURRENT PROT
Q672 2SA1309A BOOST CONV ON/OFF SW
Q610 2SC3311A
Q609 2SA1309A
Q606 RD18ESB2
RV601
Q603 RD54MTA
Q604 RD54MTA
T603
T605
Q671 D1NL20
Q670 RD18ES
Q673 D1NS4
Q674 D1NL20
Q672 RD18ES-TB2
Q675 RD54M
IC603 SI-3050F +6.5V REG
PH675 PS2561-1-L
Q674 2SC4052 STBY REG OUT
Q675 2SC4052 STBY REG OUT
Q681 1SS119
Q680 RD3.3ES-T1B2
Q682 RD3.3ESTIB2
Q683 1SS119
IC602 µPC1093J STBY +15V REG
Q671 2SC3311 HEATER ON/OFF SW
HTR
RY685
Q685 1SS119
TH601
R1611
SW600
VDR685
T686
F685
RY686
Q689 1SS119
Q686 2SC3311A RELAY DRIVE
THP686
VDR686
IC701 LA6510 CURRENT AMP
Q704 2SK699
Q709 RD12ESB2
V.RETRACE
V.STAT
ROTATION
CN600 3P
ACL
NC
ACN
CN601
CN685 4P WHT :VH
DGC
NC
NC
DGC
AC IN
DGC


IC608
μPC2412HF +12V REG
IC609
L7805CV +5V REG
IC607
μPC7905H -5V REG
IC606
L7805CV STBY +5V
D691
RD5.6ES-T1B2
D603
D2S4MTA1
D604
D2S4MTA1
D639
D2L40
D642
D1NL20
D651
D4SB54-F
L431
L432
L433
C654
68p
500V
+12V
+5V
-5V
-15V
+8V
+15V
STBY+5V
180V
IC504
LA8172
VERT OUT
D505
EGP15GPK023
D502
1SS119
D503
RD10ES-T1B2
D501
GP08D
D504
GP08D
V.SHAPE
V.RETRACE
IC701
LA6510
CURRENT AMP
ROTATION
Q1401
2SC3311A
Q1402
2SC4686A
Q1403
2SB774
Q1404
DTA124ES
T1402
T701
D1402
1SS119
D1403
RD5.6ESB2
D1407
RD5.6ESB2
D1404
1SS119
D1405
1SS119
D1406
1SS119
IC1401
NJM4558D
D706
ERA22-06
D707
ERA22-06
L408
470μH
IC702
IRY5305
CS SEL
D701
RD4.7ESB2
D702
RD4.7ESB2
D703
RD4.7ESB2
D704
RD4.7ESB2
S0
S1
S2
S3
S4
DDC CLK
HOST +5V
DDC DATA
Q404
1SS119
Q401
2SA1309A
H DRIVE
Q402
2SC3311A
H DRIVE
Q403
2SC3746
H DRIVE
D401
RD5.6ES-T1B2
D403
1SS119
H. BLANK
Q702
2SC5022-02
AMP
Q703
2SA1309A
AMP
D708
RD12ESB2
H. DRIVE
H. FOCUS
V. FOCUS
Q424
2SA1309
H SAW OUT
D427
1SS119
D454
RD10ESB2
Q416
2SC3311A
H SAW OUT
D426
1SS119
CN701
9P
WHT
:S MICRO
ROTATION+
ROTATION-
NC
V.STAT+
V.STAT-
GND
DDC DATA
Host +5V
DDC CLK
TO A BOARD
CN312
ROTATION
NTC



Q404 1SS119
Q405 1SS119
Q407 2SC5301 H OUT
Q410 STUZ52
Q406 SB560
Q402 2SC3311A H DRIVE
Q401 2SA1309A H DRIVE
Q403 2SC3746 H DRIVE
T401 HDT
Q409 2SC1309A
Q410 DTC124ES HV SW
Q413 1SS119
Q415 1SS119
HV_OVER
IC401 BA10339
IC403 BA10324A
Q420 1SS119
Q419 1SS119
Q423 1SS119
Q434 1SS119
Q422 ERB91-02
Q413 2SC3311A RELAY DRIVE
RY401
L405
T403 HDT
Q414 RDP02
Q408 RD12ESB2
Q429 1SS119
Q423 2SC3311A BUFFER
Q438 1SS119
Q426 DTA124ESA GAIN SW
Q425 DTC124ESA GAIN SW
Q457 1SS119
Q456 1SS119
Q412 RD10ESB2
Q451 1SS119
Q448 1SS119
Q424 1SS119
Q416 RD10ESB2
Q417 RD9.1ES-T1B2
Q421 MTZJ4.7C
IC1401 NJM4558D
Q706 ERA22-06
Q707 ERA22-06
Q702 2SC5022-02 AMP
Q708 RD12ESB2
Q703 2SA1309A AMP
Q1404 DTA124ES
Q1406 1SS119
H. DRIVE
H. FOCUS
H. SHAPE
H. BLK
H. BLANK
Q428 RD16ES-T1B2
Q417 IRFI9630GS-LF HV REG
Q415 2SC3311A HV DRIVE
Q414 2SA1309A HV DRIVE
Q431 ERC90M-03
Q430 ERB91-02
FB405 1.1UH
L401 22μH
L402 500μH
T404 FBT
HV ADJ
RV401
FOCUS2
FOCUS1
Q441 1SS119
Q440 10E-2
Q442 RD5.1ES-T1B2
Q443 RD5.1ES-T1B2
Q444 RD4.7ES-T1B2
Q439 ESP106
Q445 HZT33
Q446 RD4.7ES-T1B2
Q424 2SA1309 H SAW OUT
Q427 1SS119
Q454 RD10ESB2
Q416 2SC3311A H SAW OUT
Q426 1SS119
Q419 2SC3311A
Q418 2SA1309A HV DRIVE
Q420 2SL2077 HV OUT
Q432 RD16ESB2
(-5V)
(+5V)
(-15V)
(+15V)
(+12V)
(180V)
(STBY+5V)


CN810 20P
1 +12V
2 A.GND
3 A.GND
4 A.GND
5 -15V
6 H.FBP
7 H.DRIVE
8 P.GND
9 P.GND
10 A.GND
11 H.CENT OUT
12 A.GND
13 H.SHAPE
14 H.BLANK
15 V.SHAPE
16 C.BLANK
17 V.RETRACE
18 H.CENT
19 ROTATION
20 V.STAT
TO N BOARD CN910
CN811 20P
1 H.FOCUS
2 ABL
3 V.FOCUS
4 TH.PROT
5 POWER GREEN LED
6 S4
7 POWER RED LED
8 S3
9 POWER SAVE LED
10 S2
11 DEGAUSS
12 S1
13 POWER
14 S0
15 INPUT_SEL
16 HV.DET
17 HTR
18 HV_OVER
19 D.GND
20 D.GND
TO N BOARD CN911
CN812 20P
1 SW.DATA
2 H.SYNC
3 GAIN SW
4 V.SYNC
5 HOST+5V
6 H.POL
7 DDC_DATA
8 V.POL
9 DDC_CLK
10 D.GND
11 D.GND
12 OSD_SEL
13 D.GND
14 DAC_SEL
15 STBY+5V
16 OS/DA_CLK
17 RXD
18 OS/DA_MOS
19 TXD
20 CABLE DET
TO N BOARD CN912
IC401 BA10339
IC403 BA10324A
Q409 2SC1309A
Q410 DTC124ES HV SW
Q413 2SC3311A RELAY DRIVE
Q423 2SC3311A BUFFER
Q425 DTC124ESA GAIN SW
Q426 DTA124ESA GAIN SW
Q420 2SL2077 HV OUT
RY401
T403 HDT
T404 FBT NX-4148
HV ADJ
FOCUS2
FOCUS1
L402 500μH
L401 22μH
(-5V)
(-15V)
(+12V)
B-SS8443<AEP>-D..

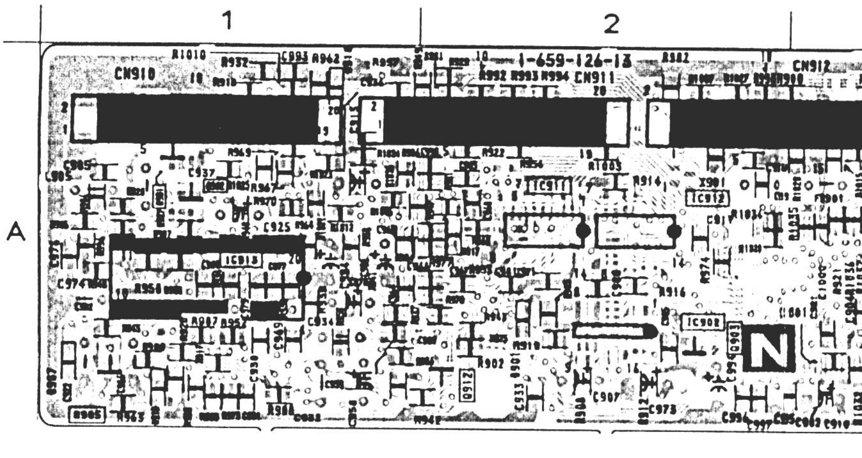
(2) Schematic Diagrams of A, N Boards

N SYSTEM CONT
EEP ROM
POWER SAVE

● N BOARD VOLTAGE LIST

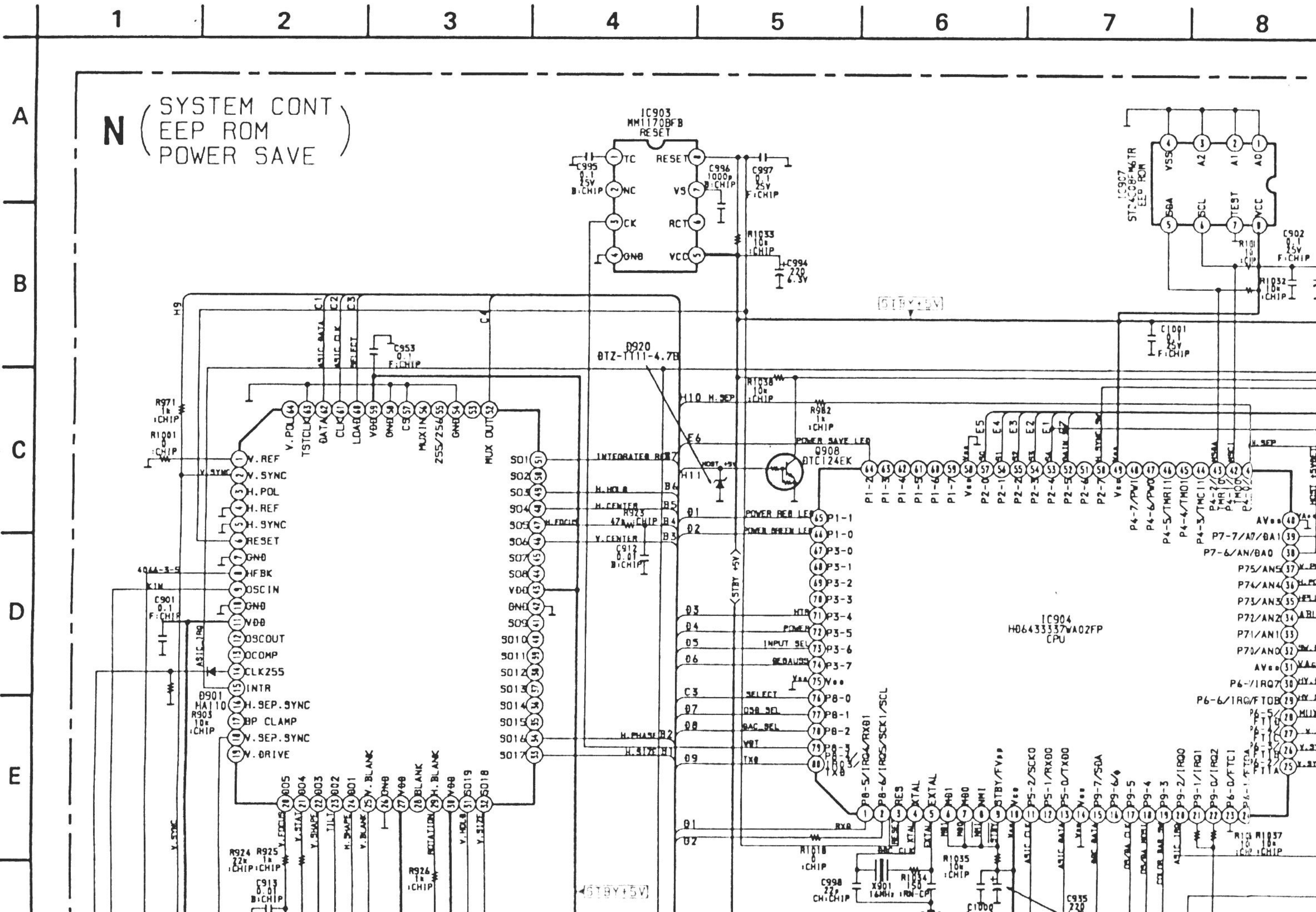
Ref.	Pin No.	Voltage [V]	Ref.	Pin No.	Voltage [V]
IC902	3	0,2		10	5.0
	4	2.5		11	0.5
	6	0.4		12	0.1
	7	0.4		13	4.5
	9	1.3	Q901	B	5.1
	11	1.3		E	5.1
	12	4.5	Q902	B	5.1
	13	1.3		E	5.1
	14	0.4	Q903	B	0.4
IC911	1	5.0		E	0.4
	2	4.8	Q905	B	1.1
	3	0.3		E	0.7
	6	0.1	Q905	B	1.1
	9	4.9		E	0.7
	11	0.3	Q908	C	5.0
	12	4.9	Q910	G	0.4
	13	5.0		D	*
IC912	1	0.3	Q912	B	0.2
	2	4.7		C	6.7
	3	4.7			
	4	5.0			
	5	–0.2			
	6	0			
	8	0.3			
	9	0.3			

— N BOARD (Conductor side) —


1
2
A
CN910
CN911
CN912
1-659-126-13
IC911
IC912
IC913
IC902
X901
N

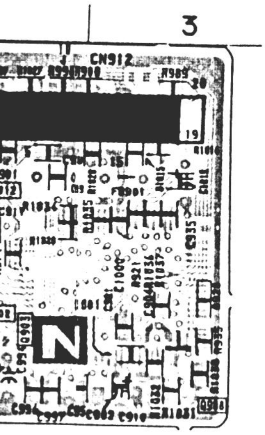
: Pattern from the side which ena

: Pattern of the rear side.


1
2
3
4
5
6
7
8
A
B
C
D
E
N (SYSTEM CONT EEP ROM POWER SAVE)
IC903 MM1170BFB RESET
IC907 ST24C08-M6TR EEP ROM
IC904 HD6433337VA02FP CPU
D920 DTZ-TT11-4.7B
Q908 DTC124EK
D901 HA1103
X901 16MHz
STBY +5V

NT

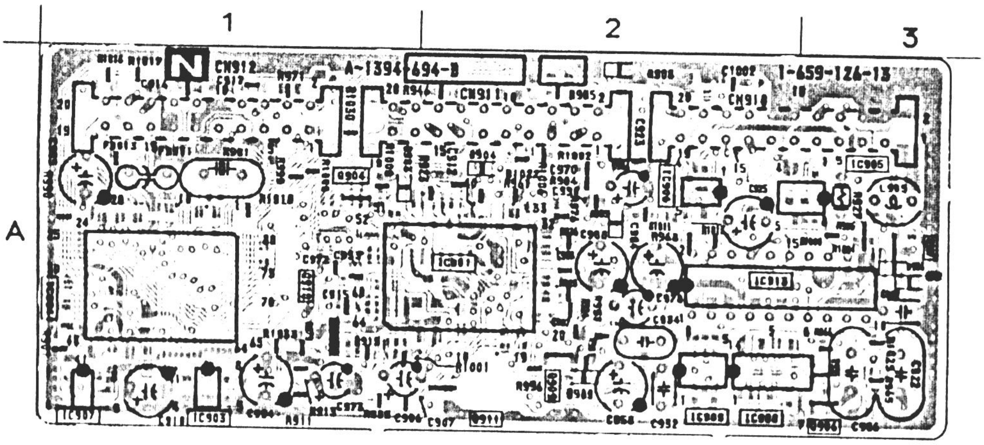
E



the side which enables seeing

e rear side.

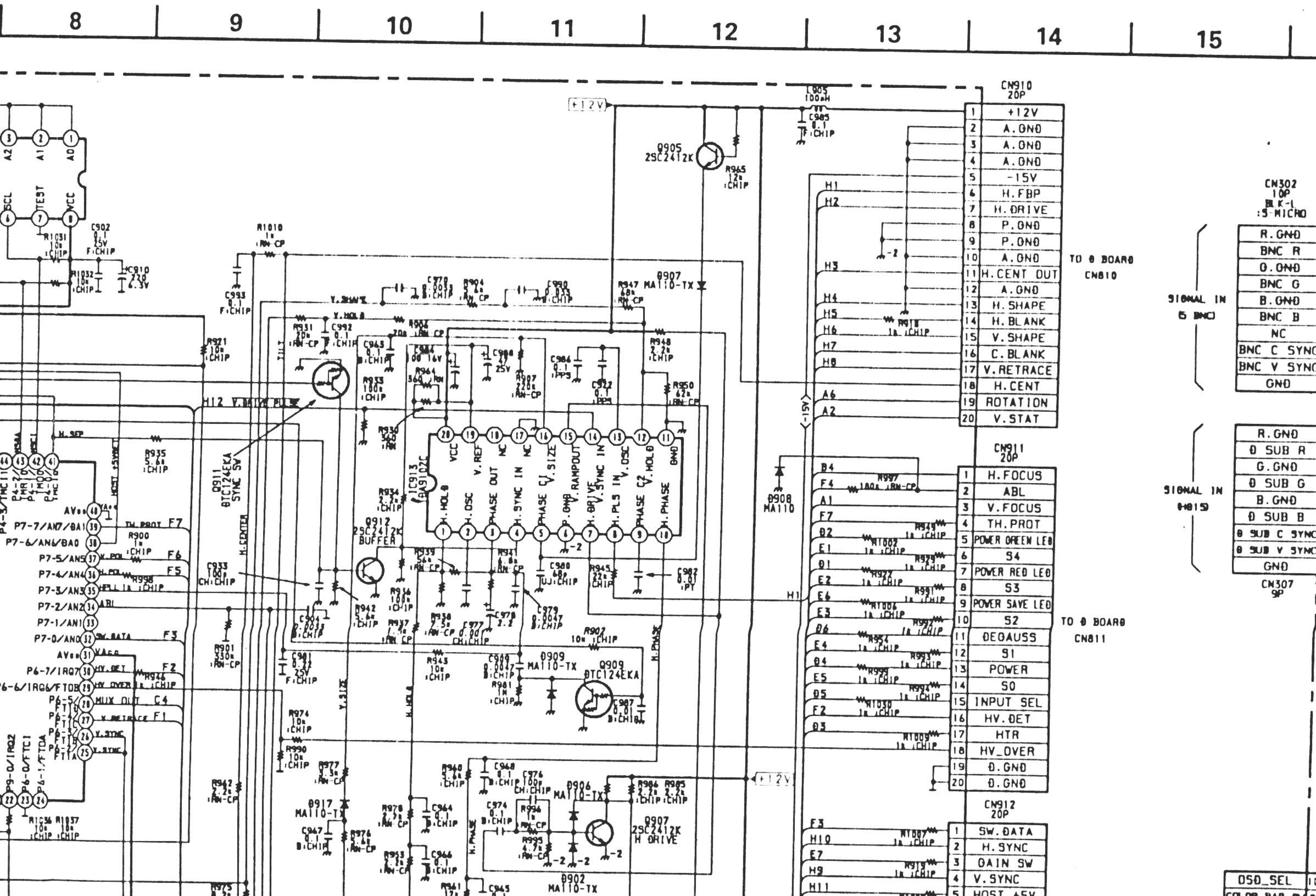
— N BOARD (Component side) —



1
2
3
A
N
CN912
A-1394-694-B
1-659-126-13
CN911
CN910
IC901
IC903
IC905
IC907
IC908
IC909
IC910
IC913

Pattern from the side which enables seeing

: Pattern of the rear side.



8
9
10
11
12
13
14
15
CN910 20P
1 +12V
2 A.GND
3 A.GND
4 A.GND
5 -15V
6 H.FBP
7 H.DRIVE
8 P.GND
9 P.GND
10 A.GND
11 H.CENT OUT
12 A.GND
13 H.SHAPE
14 H.BLANK
15 V.SHAPE
16 C.BLANK
17 V.RETRACE
18 H.CENT
19 ROTATION
20 V.STAT
TO B BOARD CN810
CN911 20P
1 H.FOCUS
2 ABL
3 V.FOCUS
4 TH.PROT
5 POWER GREEN LED
6 S4
7 POWER RED LED
8 S3
9 POWER SAVE LED
10 S2
11 DEGAUSS
12 S1
13 POWER
14 S0
15 INPUT SEL
16 HV.DET
17 HTR
18 HV_OVER
19 D.GND
20 D.GND
TO B BOARD CN811
CN912 20P
1 SW.DATA
2 H.SYNC
3 GAIN SW
4 V.SYNC
5 HOST +5V
CN302 10P BLK-L :S MICRO
R.GND
BNC R
G.GND
BNC G
B.GND
BNC B
NC
BNC C SYNC
BNC V SYNC
GND
SIGNAL IN 5 BNC
R.GND
D SUB R
G.GND
D SUB G
B.GND
D SUB B
D SUB C SYNC
D SUB V SYNC
GND
SIGNAL IN (HD15)
CN307 9P
OSD_SEL
IC913 BA9102C
VCC
V.REF
PHASE OUT
NC
H.SYNC IN
NC
PHASE C1
V.SIZE
V.RAMPOUT
V.SYNC IN
V.OSC
H.HOLD
GND
H.OSC
P.GND
H.DRIVE
H.PLS IN
PHASE C2
H.PHASE
Q905 2SC2412K
Q907 MA110-TX
Q908 MA110
Q909 DTC124EKA
Q911 DTC124EKA SYNC 5V
Q912 2SC2412K BUFFER
Q917 MA110-TX
Q906 MA110-TX
Q907 2SC2412K H DRIVE
Q902 MA110-TX
L905 100μH
+12V
-15V
V.SHAPE
V.HOLD
V.DRIVE PLS
H.CENTER
V.SIZE
H.HOLD
H.PHASE
TILT
P7-7/AN7/BA1
P7-6/AN6/BA0
P7-5/AN5
P7-4/AN4
P7-3/AN3
P7-2/AN2
P7-1/AN1
P7-0/AN0
P6-7/IRQ7
P6-6/IRQ6/FTOB
P6-5/FTI
P6-4
P6-1/FTOA
P9-0/IRQ2
P6-0/FTCI
AVcc
AVss
TEST
VCC
SCL
A0
A1
A2
H.SEP
TH.PROT
H.POL
V.POL
BL
SW.DATA
HV.DET
HV.OVER
MUX OUT
V.RETRACE
V.SYNC
H.SYNC
F1
F2
F3
F4
F5
F6
F7
H1
H2
H3
H4
H5
H6
H7
H8
H9
H10
H11
H12
A1
A2
A6
B1
B2
B3
B4
B5
B6
E1
E2
E3
E4
E5
E6
E7
C4

● N BOARD SEMICONDUCTOR LOCATION

IC	(Conductor Side)	(Component Side)
IC901		A–1
IC902	A–2	
IC903		A–1
IC904		A–1
IC905		A–3
IC906		A–2
IC907		A–1
IC908	A–3	A–2
IC909		A–2
IC911	A–2	
IC912	A–2	
IC913	A–1	A–2

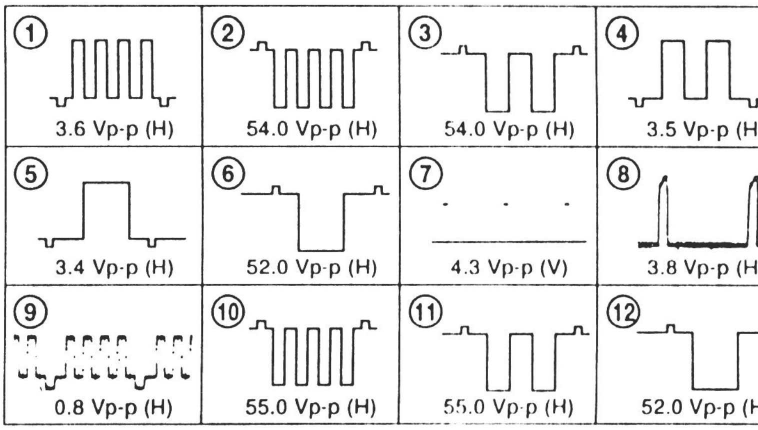
TRANSISTOR	(Conductor Side)	(Component Side)
Q901	A–1	
Q902	A–1	
Q903	A–2	
Q904		A–1
Q905	A–1	
Q907		A–3
Q908	A–3	
Q909		A–2
Q910		A–1
Q911		A–2
Q912	A–2	

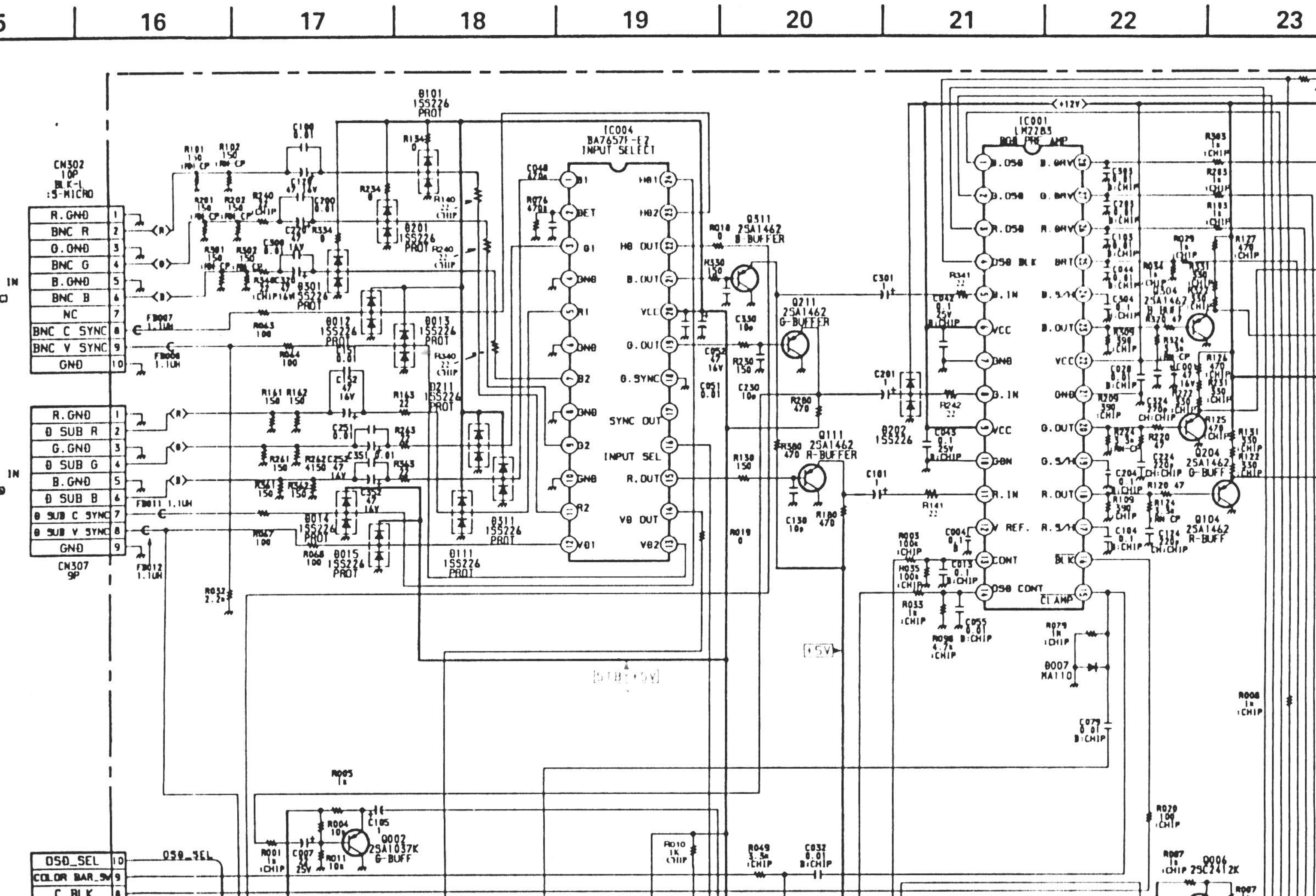
DIODE	(Conductor Side)	(Component Side)
D901	A–2	
D902		A–3
D903		A–1
D904		A–2
D905		A–2
D906		A–3
D907	A–1	
D908		A–2
D909		A–2
D917	A–2	
D920	A–3	

CRYSTAL	(Conductor Side)	(Component Side)
X901	A–2	A–1

es seeing

● A BOARD WAVEFORMS




16
17
18
19
20
21
22
23
CN302 10P
R.GND
BNC R
G.GND
BNC G
B.GND
BNC B
NC
BNC C SYNC
BNC V SYNC
GND
IN
R.GND
0 SUB R
G.GND
0 SUB G
B.GND
0 SUB B
0 SUB C SYNC
0 SUB V SYNC
GND
CN307 9P
IC004 BA7657F-E2 INPUT SELECT
Q311 2SA1462 B BUFFER
Q211 2SA1462 G-BUFFER
Q111 2SA1462 R-BUFFER
IC001 LM2283 RGB PRE AMP
Q104 2SA1462 R-BUFF
Q204 2SA1462 G-BUFF
Q304 2SA1462
Q002 2SA1037K G-BUFF
Q006 2SC2412K
D007 MA110
(+12V)
+5V
STBY+5V
OSD_SEL
COLOR BAR_5V
C BLK

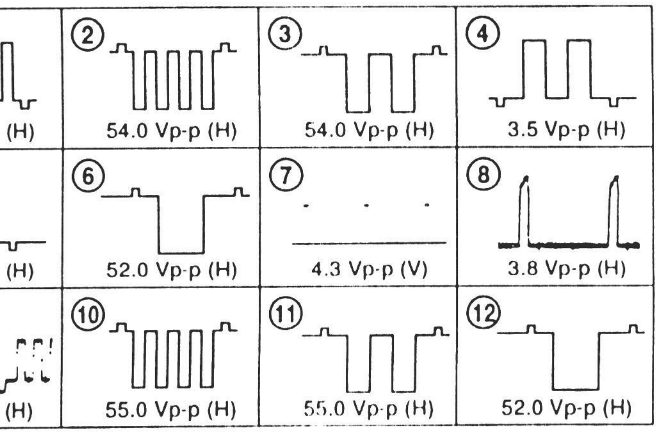
● A BORD VOLTAGE LIST

Ref.	Pin No.	Voltage [V]
IC001	1	0
	2	0
	3	0
	4	0
	5	2.3
	11	2.2
	12	2.0
	13	1.8
	14	1.5
	15	3.8
	16	4.5
	17	7.2
	18	1.9
	19	7.2
	20	1.8
	23	1.9
	24	7.2
	25	0.9
	26	3.1
	27	3.1
	28	3.0
IC003	1	7.2
	2	0.2
	3	3.7
	4	4.2
	5	0.5
	6	2.6
	7	1.5
	8	5.0
	9	1.3
	10	1.3
	12	3.2
	13	0.3

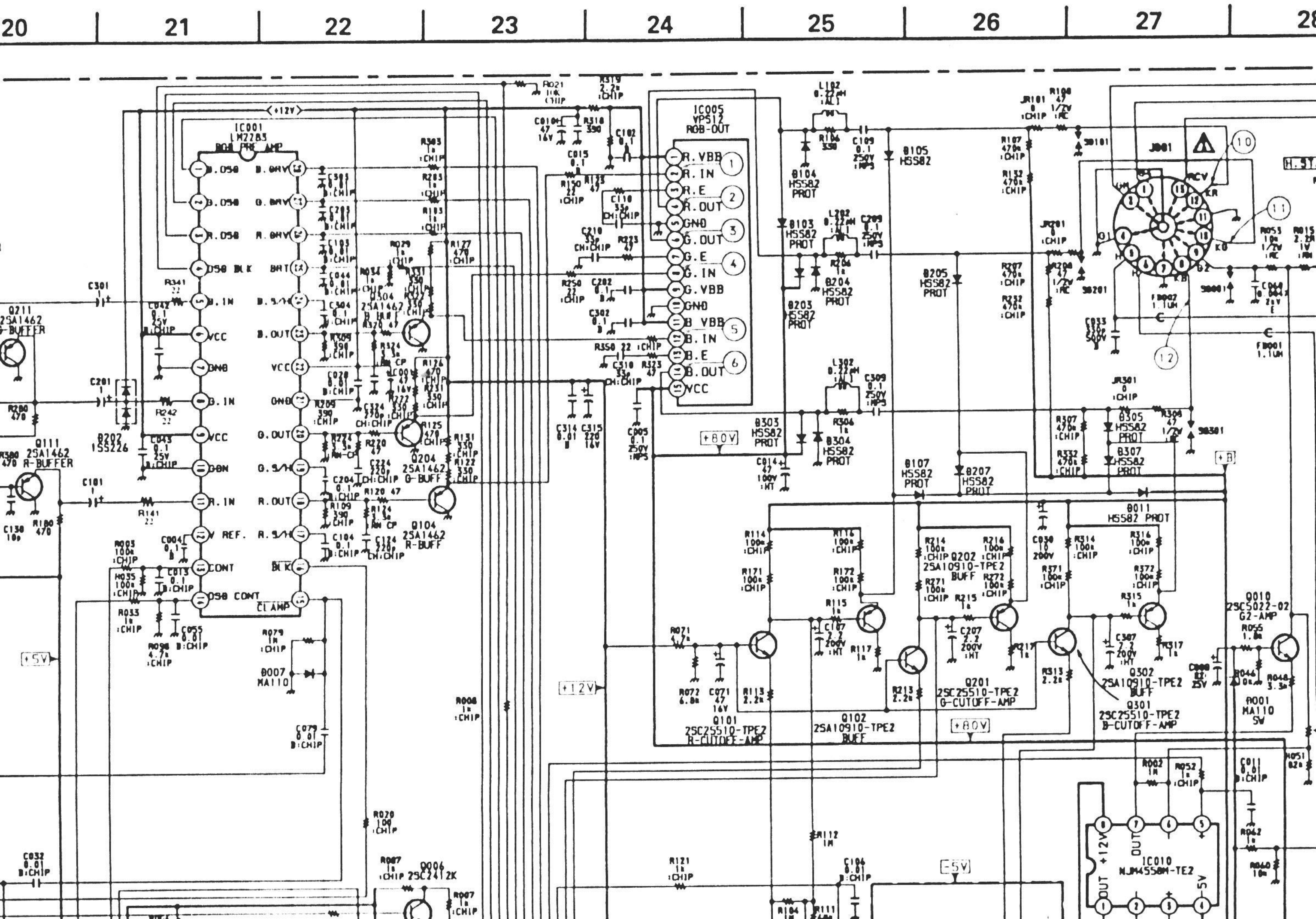
Ref.	Pin No.	Voltage [V]
	14	4.9
	15	0
	16	5.0
	17	5.0
	18	0.7
	19	1.3
	20	1.3
	21	0.3
IC005	1	9.8
	2	2.7
	3	2.0
	4	49.9
	6	51.4
	7	1.9
	8	2.6
	9	9.8
	11	9.9
	12	2.6
	13	1.9
	14	51.0
IC006	1	0
	2	1.5
	3	1.5
	5	2.6
	6	4.7
	7	4.8
	8	4.8
	10	3.5
	12	0
	13	0
	14	0
	15	0

Ref.
IC007
Q002
Q003
Q004
Q005
Q006
Q007
Q008
Q010
Q060
Q101

D WAVEFORMS



(H)
②
54.0 Vp-p (H)
③
54.0 Vp-p (H)
④
3.5 Vp-p (H)
(H)
⑥
52.0 Vp-p (H)
⑦
4.3 Vp-p (V)
⑧
3.8 Vp-p (H)
(H)
⑩
55.0 Vp-p (H)
⑪
55.0 Vp-p (H)
⑫
52.0 Vp-p (H)



20
21
22
23
24
25
26
27
28
IC001
LM2283
RGB PRE AMP
IC005
VP512
RGB-OUT
R.VBB
R.IN
R.E
R.OUT
GND
G.OUT
G.E
G.IN
G.VBB
B.VBB
B.IN
B.E
B.OUT
VCC
+12V
+80V
+5V
-5V
+B
Q211
2SA1462
B-BUFFER
Q111
2SA1462
R-BUFFER
Q204
2SA1462
G-BUFF
Q104
2SA1462
R-BUFF
Q101
2SC2551O-TPE2
R-CUTOFF-AMP
Q102
2SA1091O-TPE2
BUFF
Q201
2SC2551O-TPE2
G-CUTOFF-AMP
Q202
2SA1091O-TPE2
BUFF
Q301
2SC2551O-TPE2
B-CUTOFF-AMP
Q302
2SA1091O-TPE2
BUFF
Q010
2SC5022-02
G2-AMP
Q006
2SC2412K
IC010
NJM4558M-TE2
D104
HSS82
PROT
D105
HSS82
D103
HSS82
PROT
D204
HSS82
PROT
D205
HSS82
PROT
D203
HSS82
PROT
D303
HSS82
PROT
D304
HSS82
PROT
D305
HSS82
PROT
D307
HSS82
PROT
D107
HSS82
PROT
D207
HSS82
PROT
D011
HSS82 PROT
D202
1SS226
D007
MA110
D001
MA110
SW
J001
CLAMP

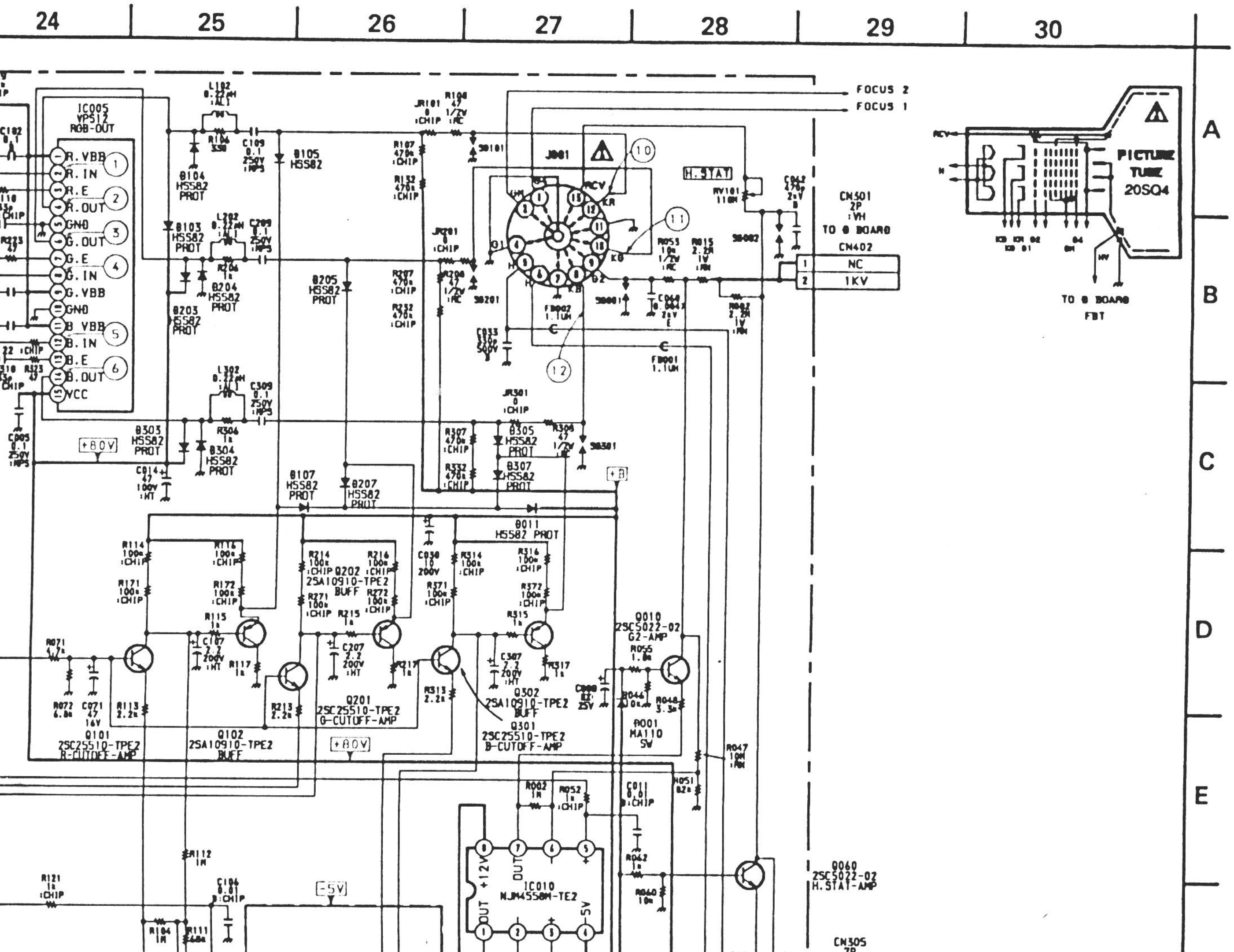
● A BOARD VOLTAGE LIST

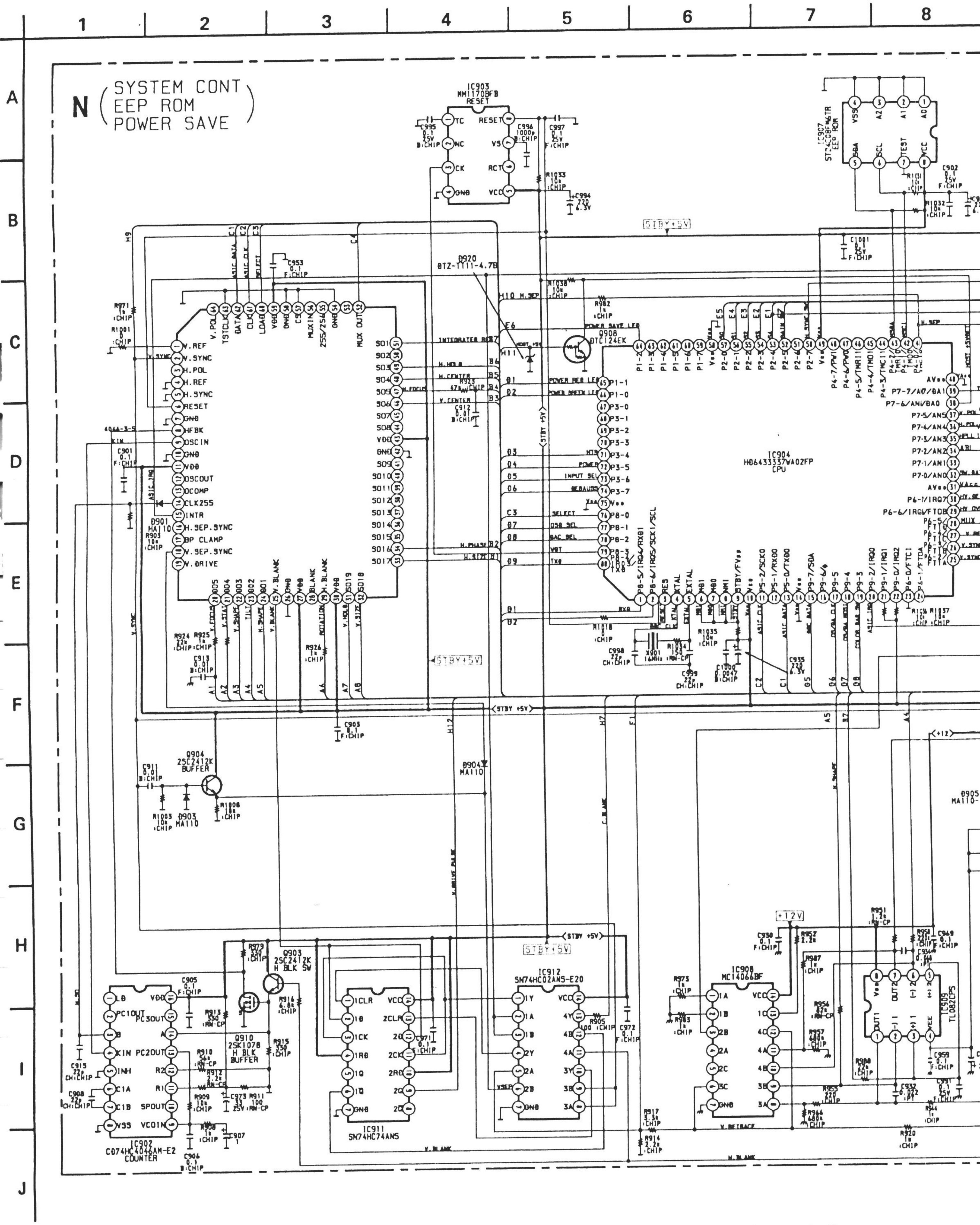
Ref.	Pi No.	Voltage [V]
IC001	1	0
	2	0
	3	0
	4	0
	5	2.3
	11	2.2
	12	2.0
	13	1.8
	14	1.5
	15	3.8
	16	4.5
	17	7.2
	18	1.9
	19	7.2
	20	1.8
	23	1.9
	24	7.2
	25	0.9
	26	3.1
	27	3.1
	28	3.0
IC003	1	7.2
	2	0.2
	3	3.7
	4	4.2
	5	0.5
	6	2.6
	7	1.5
	8	5.0
	9	1.3
	10	1.3
	12	3.2
	13	0.3

Ref.	Pin No.	Voltage [V]
	14	4.9
	15	0
	16	5.0
	17	5.0
	18	0.7
	19	1.3
	20	1.3
	21	0.3
IC005	1	9.8
	2	2.7
	3	2.0
	4	49.9
	6	51.4
	7	1.9
	8	2.6
	9	9.8
	11	9.9
	12	2.6
	13	1.9
	14	51.0
IC006	1	0
	2	1.5
	3	1.5
	5	2.6
	6	4.7
	7	4.8
	8	4.8
	10	3.5
	12	0
	13	0
	14	0
	15	0

Ref.	Pin No.	Voltage [V]
IC007	5	0.5
	6	4.3
	7	0
Q002	B	2.5
	E	3.1
Q003	B	0
	C	2.7
Q004	B	3.5
	C	0
Q005	B	0
	C	4.9
Q006	B	–0.7
	C	2.5
Q007	B	0.7
	C	0.2
Q008	B	4.6
	E	*
Q010	B	9.5
	C	319.3
	E	9.0
Q060	B	10.8
	C	301.2
	E	10.2
Q101	B	7.0
	C	91.1
	E	6.4

Ref.	Pin No.	Voltage [V]
Q102	B	91.1
	C	0.8
	E	91.6
Q104	B	1.9
	E	2.7
Q201	B	7.0
	C	95.0
	E	6.4
Q202	B	95.0
	C	0.7
	E	95.6
Q204	B	1.8
	E	2.6
Q301	B	7.0
	C	97.8
	E	6.5
Q302	B	97.8
	C	0.6
	E	98.4
Q304	B	1.9
	E	2.6
J001	KR	64.8
	KG	69.7
	KB	72.7
	G2	324.0
	H1	6.2


24
25
26
27
28
29
30
A
B
C
D
E
IC005
VPS12
RGB-OUT
R.VBB
R.IN
R.E
R.OUT
GND
G.OUT
G.E
G.IN
G.VBB
GND
B VBB
B.IN
B.E
B.OUT
VCC
L102
0.22μH
D104
HS582
PROT
D105
HS582
C109
0.1
250V
D103
HS582
PROT
L202
0.22μH
C209
0.1
250V
D204
HS582
PROT
D203
HS582
PROT
D205
HS582
PROT
L302
0.22μH
C309
0.1
250V
D303
HS582
PROT
D304
HS582
PROT
+80V
C014
47
100V
D107
HS582
PROT
D207
HS582
PROT
JR101
R108
R107
470k
:CHIP
R132
470k
:CHIP
JR201
R207
R208
R232
JR301
R307
R332
D305
HS582
PROT
D307
HS582
PROT
R308
SG101
SG201
SG301
J001
RCV
KR
KG
KB
G1
G2
H
FB002
1.1UH
FB001
1.1UH
C033
H.STAT
RV101
110M
C042
SG002
SG001
R053
R015
R082
C040
FOCUS 2
FOCUS 1
CN501
2P
:VH
TO D BOARD
CN402
NC
1KV
PICTURE
TUBE
20SQ4
TO D BOARD
FBT
+B
D011
HS582 PROT
R114
R116
R171
R172
R115
C107
R117
R071
R072
C071
R113
Q101
2SC2551O-TPE2
R-CUTOFF-AMP
Q102
2SA1091O-TPE2
BUFF
R214
R216
Q202
2SA1091O-TPE2
BUFF
R271
R272
R215
C207
R217
R213
Q201
2SC2551O-TPE2
G-CUTOFF-AMP
+80V
C030
10
200V
R314
R316
R371
R372
R315
C307
R317
R313
Q302
2SA1091O-TPE2
BUFF
Q301
2SC2551O-TPE2
B-CUTOFF-AMP
Q010
2SC5022-02
G2-AMP
R055
1.8k
C008
R046
R048
3.3k
D001
MA110
SW
R047
10M
R051
82k
R002
1M
R052
C011
0.01
R042
R040
10k
IC010
NJM4558M-TE2
+12V
OUT
5V
Q060
2SC5022-02
H.STAT-AMP
R112
1M
R121
C106
0.01
-5V
R104
1M
R111
CN305

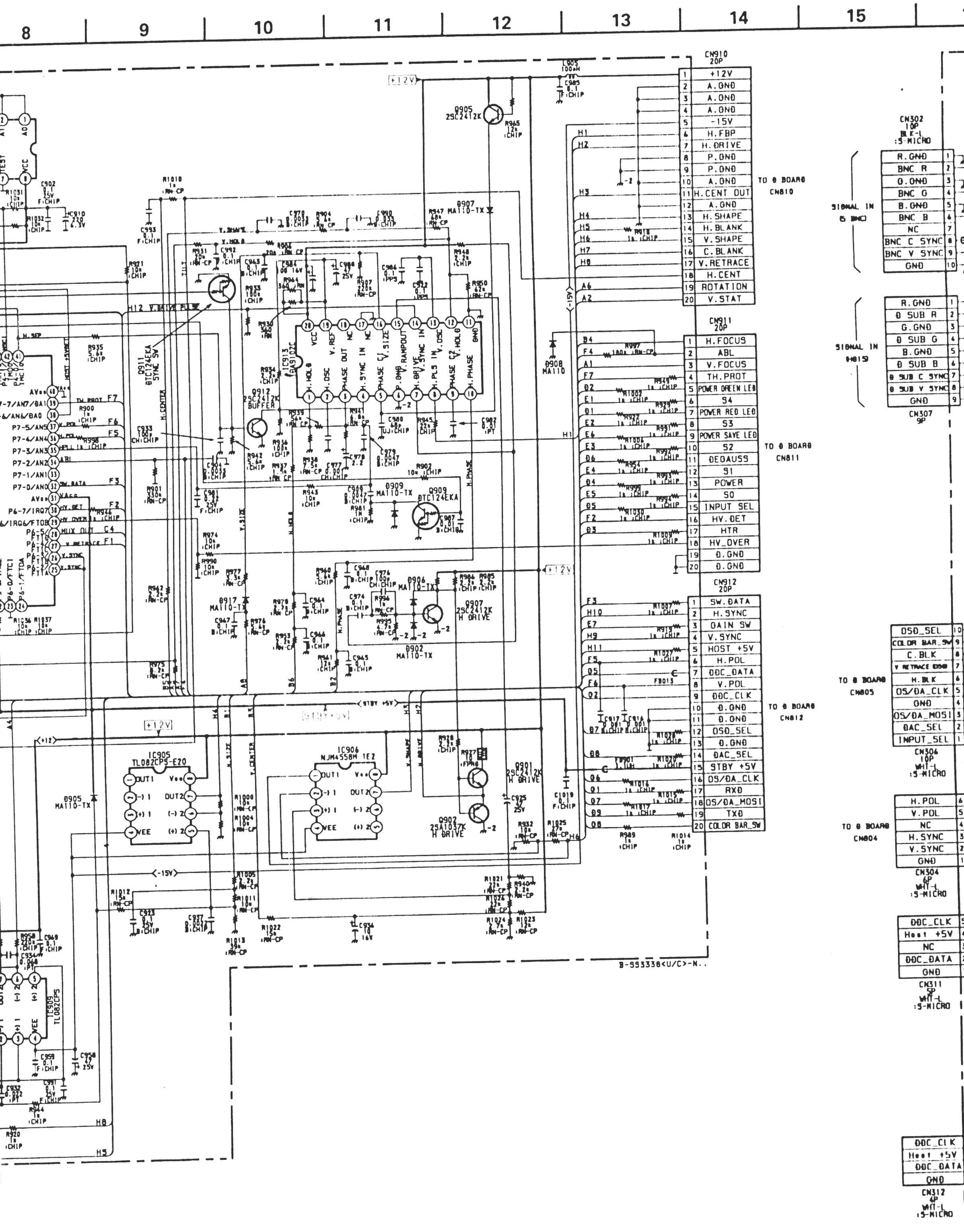

N (SYSTEM CONT
EEP ROM
POWER SAVE)
IC903 MM1170BFB RESET
IC907 ST24C04FM6TR EEP ROM
IC904 H8643337VA02FP CPU
D920 DTZ-TT11-4.7B
Q908 DTC124EK
Q904 2SC2412K BUFFER
Q903 2SC2412K H BLK SW
Q910 2SK1078 H BLK BUFFER
IC902 CD74HC4046AM-E2 COUNTER
IC911 SN74HC74ANS
IC912 SN74HC02ANS-E20
IC908 MC14066BF
IC909 TL082CPS
X901 16MHz
STBY +5V
+12V
1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J

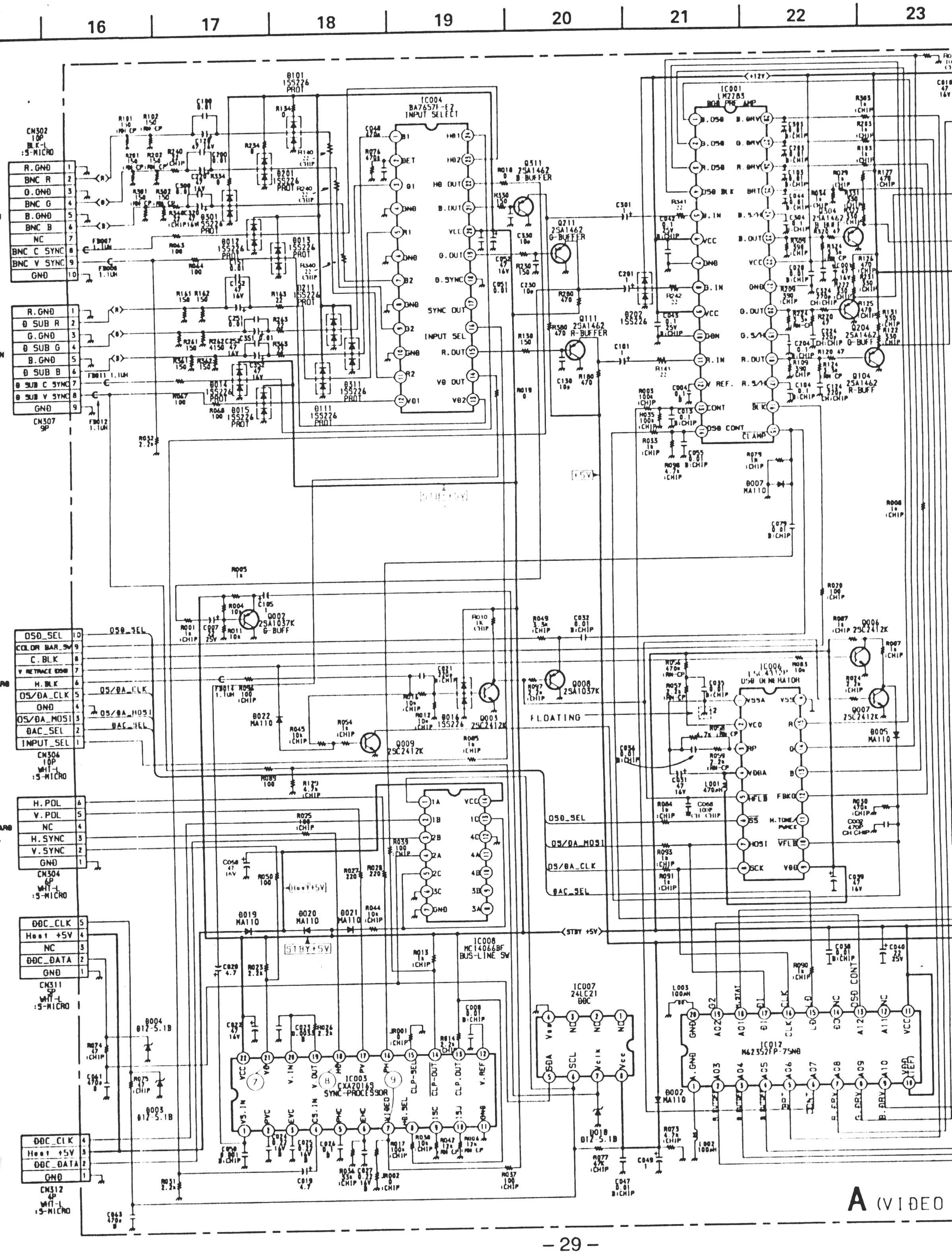
Schematic diagram

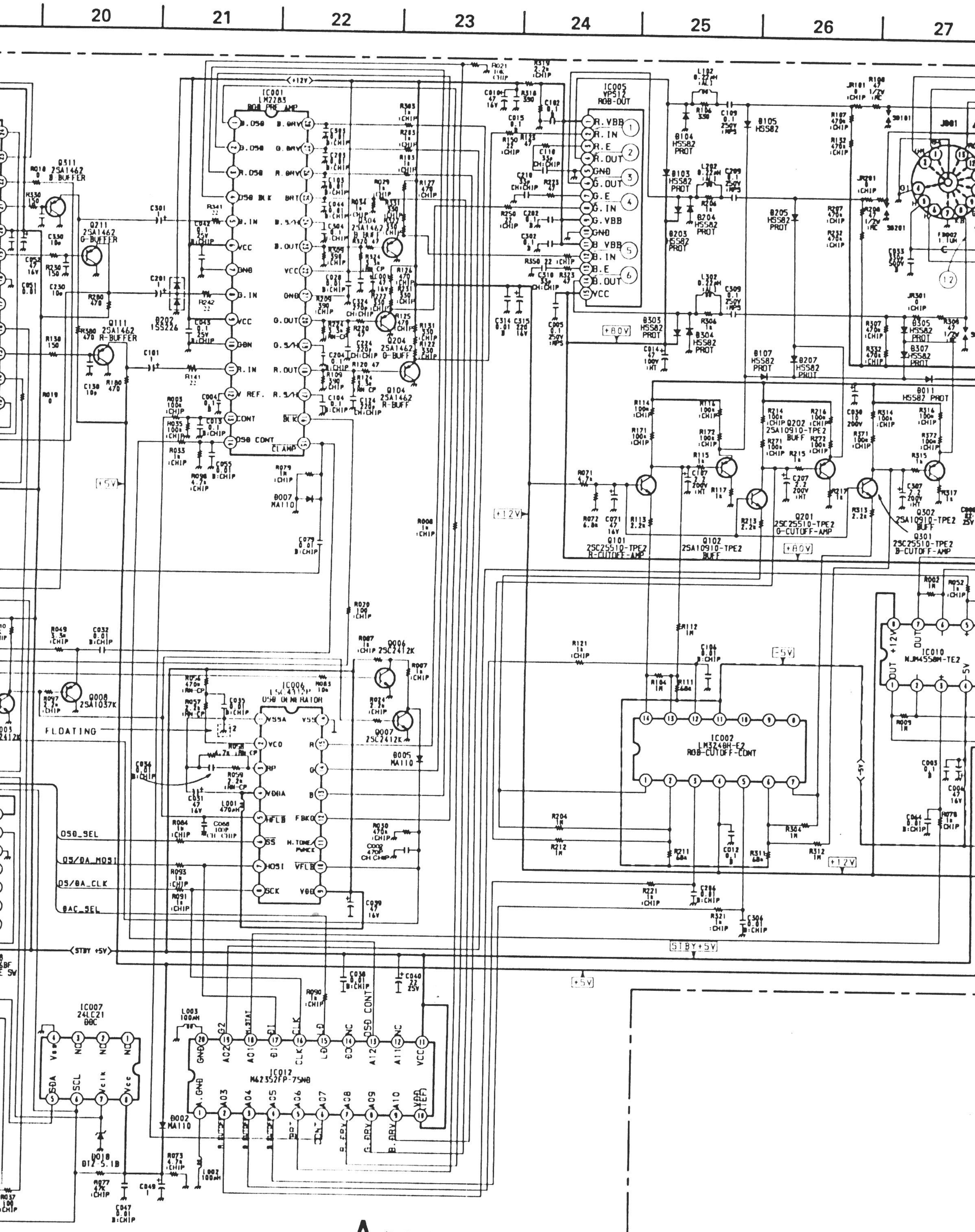
← D board

Schematic diagrams

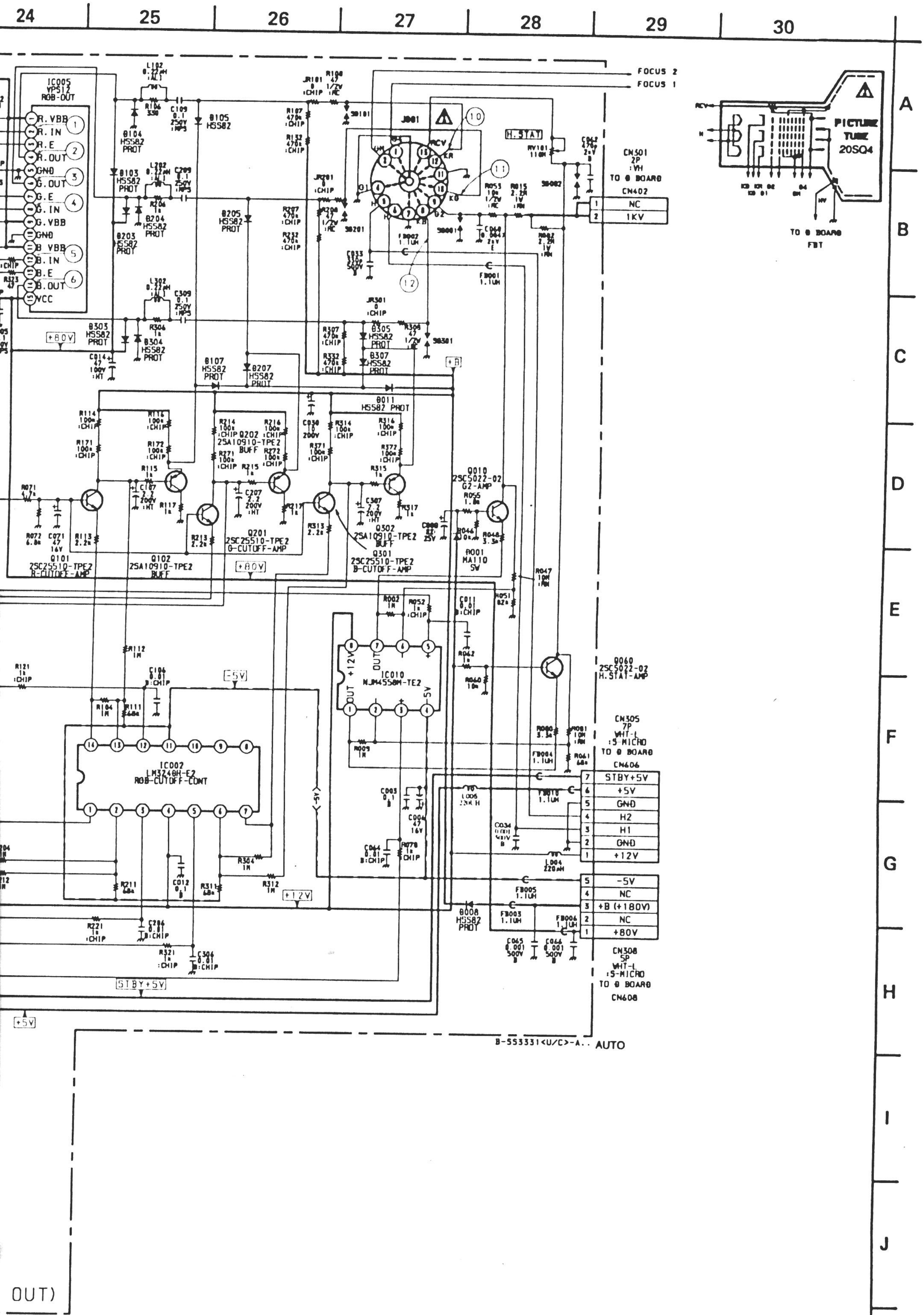
A N boards →


8
9
10
11
12
13
14
15
CN910
20P
1 +12V
2 A.GND
3 A.GND
4 A.GND
5 -15V
6 H.FBP
7 H.DRIVE
8 P.GND
9 P.GND
10 A.GND
11 H.CENT OUT
12 A.GND
13 H.SHAPE
14 H.BLANK
15 V.SHAPE
16 C.BLANK
17 V.RETRACE
18 H.CENT
19 ROTATION
20 V.STAT
TO B BOARD CN810
CN911
20P
1 H.FOCUS
2 ABL
3 V.FOCUS
4 TH.PROT
5 POWER GREEN LED
6 S4
7 POWER RED LED
8 S3
9 POWER SAVE LED
10 S2
11 DEGAUSS
12 S1
13 POWER
14 S0
15 INPUT SEL
16 HV.DET
17 HTR
18 HV_OVER
19 D.GND
20 D.GND
TO B BOARD CN811
CN912
20P
1 SW.DATA
2 H.SYNC
3 GAIN SW
4 V.SYNC
5 HOST +5V
6 H.POL
7 DDC_DATA
8 V.POL
9 DDC_CLK
10 D.GND
11 D.GND
12 OSD_SEL
13 D.GND
14 DAC_SEL
15 STBY +5V
16 OS/DA_CLK
17 RXD
18 OS/DA_MOSI
19 TXD
20 COLOR BAR_SW
TO B BOARD CN812
CN302
10P
BLK-L
:S-MICRO
SIGNAL IN (5 BNC)
1 R.GND
2 BNC R
3 G.GND
4 BNC G
5 B.GND
6 BNC B
7 NC
8 BNC C SYNC
9 BNC V SYNC
10 GND
SIGNAL IN (HD15)
1 R.GND
2 D SUB R
3 G.GND
4 D SUB G
5 B.GND
6 D SUB B
7 D SUB C SYNC
8 D SUB V SYNC
9 GND
CN307
9P
TO B BOARD CN805
10 OSD_SEL
9 COLOR BAR_SW
8 C.BLK
7 V RETRACE OSD
6 H.BLK
5 OS/DA_CLK
4 GND
3 OS/DA_MOSI
2 DAC_SEL
1 INPUT_SEL
CN306
10P
WHT-L
:S-MICRO
TO B BOARD CN804
6 H.POL
5 V.POL
4 NC
3 H.SYNC
2 V.SYNC
1 GND
CN304
6P
WHT-L
:S-MICRO
5 DDC_CLK
4 Host +5V
3 NC
2 DDC_DATA
1 GND
CN311
5P
WHT-L
:S-MICRO
DDC_CLK
Host +5V
DDC_DATA
GND
CN312
4P
WHT-L
:S-MICRO
IC913
BA9102C
VCC
V.REF
PHASE OUT
NC
H.SYNC IN
NC
PHASE C1
V.SIZE
P.GND
V.RAMPOUT
V.DRIVE
V.SYNC IN
H.PLS IN
V.OSC
V.HOLD
C2 V.HOLD
H.PHASE
GND
H.HOLD
H.OSC
IC905
TL082CPS-E20
IC906
NJM4558M TE2
IC909
TL082CPS
OUT1
OUT2
(-) 1
(+) 1
(-) 2
(+) 2
VEE
Vcc
Q905
2SC2412K
Q907
2SC2412K
H DRIVE
Q909
DTC124EKA
Q911
DTC124EKA
SYNC SW
Q912
2SC2412K
BUFFER
Q901
2SC2412K
H DRIVE
Q902
2SA1037K
H DRIVE
Q906
MA110-TX
D907
MA110-TX
D908
MA110
D909
MA110-TX
D902
MA110-TX
D917
MA110-TX
D905
MA110-TX
L905
100μH
+12V
-15V
(STBY +5V)
(+12)
V.SHAPE
V.HOLD
H12 V.DRIVE PULSE
H.CENTER
TILT
V.SIZE
H.HOLD
H.PHASE
H.SEP
AVcc
P7-7/AN7/DA1
P7-6/AN6/DA0
P7-5/AN5
P7-4/AN4
P7-3/AN3
P7-2/AN2
P7-1/AN1
P7-0/AN0
P6-7/IRQ7
P6-6/IRG6/FTOB
P6-5/FTID
P6-4/FTIC
P6-3/FTIB
P6-2/FTOA
P6-1/FTIA
P6-0/FTCI
TH PROT
F7
F6
F5
F3
F2
F1
C4
HV.DET
HV OVER
MUX OUT
V RETRACE
V.SYNC
H.POL
ABL
SW DATA
VCC
TEST
AD
H1
H2
H3
H4
H5
H6
H7
H8
H9
H10
H11
A6
A2
A1
B4
F4
E1
E2
E3
E4
E5
E6
E7
D1
D2
D3
D4
D5
D6
D7
D8
D9
F3
F5
F6
D5
D2
FB013
B-993338<U/C>-N..


16
17
18
19
20
21
22
23
CN302 10P BLK-L :S-MICRO
R.GND
BNC R
G.GND
BNC G
B.GND
BNC B
NC
BNC C SYNC
BNC V SYNC
GND
R.GND
B SUB R
G.GND
B SUB G
B.GND
B SUB B
B SUB C SYNC
B SUB V SYNC
GND
CN307 9P
D101 1SS226 PROT
IC004 BA7657F-E2 INPUT SELECT
HB OUT
B.OUT
VCC
G.OUT
G.SYNC
SYNC OUT
INPUT SEL
R.OUT
VB OUT
VB2
Q511 2SA1462 B BUFFER
Q211 2SA1462 G-BUFFER
Q111 2SA1462 R-BUFFER
IC001 LM2283 RGB PRE AMP
OSD BLK
VCC
GND
OSD CONT
CLAMP
R.IN
G.IN
B.IN
V REF.
CONT
Q104 2SA1462 R-BUFF
Q204 2SA1462 G-BUFF
D007 MA110
+12V
+5V
STBY+5V
Q002 2SA1037K G-BUFF
Q008 2SA1037K
Q003 2SC2412K
Q009 2SC2412K
Q006 2SC2412K
Q007 2SC2412K
D022 MA110
D005 MA110
FLOATING
IC006 OSD GENERATOR
VSSA
VCO
RP
VDDA
FLB
SS
MOSI
SCK
VDD
FBKG
H.TONE
VFLB
OSD_SEL
COLOR BAR_SW
C.BLK
V RETRACE OSD
H.BLK
OS/DA_CLK
GND
OS/DA_MOSI
DAC_SEL
INPUT_SEL
CN304 10P WHT-L :S-MICRO
H.POL
V.POL
NC
H.SYNC
V.SYNC
GND
CN304 6P WHT-L :S-MICRO
IC008 MC14066BF BUS-LINE SW
D019 MA110
D020 MA110
D021 MA110
Host +5V
DDC_CLK
NC
DDC_DATA
GND
CN311 5P WHT-L :S-MICRO
D004 01Z-5.1B
D003 01Z-5.1B
IC003 CXA2016S SYNC-PROCESSOR
VCC
V.IN
V.OUT
V.REF
VS.IN
PVC
EVC
CS.IN
HB.SEL
CLP-SEL
CLP-OUT
IC007 24LC21 DDC
SDA
SCL
Vclk
Vcc
D018 01Z-5.1B
D002 MA110
IC012 M62352FP-75NB
L003 100uH
L002 100uH
DDC_CLK
Host +5V
DDC_DATA
GND
CN312 4P WHT-L :S-MICRO
A (VIDEO


20
21
22
23
24
25
26
27
IC001
LM2283
RGB PRE AMP
IC005
VPS12
RGB-OUT
R.VBB
R.IN
R.E
R.OUT
GND
G.OUT
G.E
G.IN
G.VBB
B.VBB
B.IN
B.E
B.OUT
VCC
Q511
2SA1462
B BUFFER
Q211
2SA1462
G-BUFFER
Q111
2SA1462
R-BUFFER
Q204
2SA1462
G-BUFF
Q104
2SA1462
R-BUFF
D202
1SS226
D007
MA110
+12V
+5V
+80V
-5V
STBY +5V
FLOATING
Q008
2SA1037K
Q006
2SC2412K
Q007
2SC2412K
D005
MA110
IC006
LSC4312P
OSD GENERATOR
OSD_SEL
OS/DA_MOSI
OS/DA_CLK
DAC_SEL
IC007
24LC21
DDC
SDA
SCL
Vclk
Vcc
D018
DTZ 5.1B
IC012
M62352FP-75ND
D002
MA110
IC002
LM3248H-E2
RGB-CUTOFF-CONT
IC010
NJM4558M-TE2
Q101
2SC2551D-TPE2
R-CUTOFF-AMP
Q102
2SA1091D-TPE2
BUFF
Q201
2SC2551D-TPE2
G-CUTOFF-AMP
Q202
2SA1091D-TPE2
BUFF
Q301
2SC2551D-TPE2
B-CUTOFF-AMP
Q302
2SA1091D-TPE2
BUFF
D104
HSS82
PROT
D105
HSS82
D103
HSS82
PROT
D204
HSS82
PROT
D205
HSS82
PROT
D203
HSS82
PROT
D303
HSS82
PROT
D304
HSS82
PROT
D107
HSS82
PROT
D207
HSS82
PROT
D305
HSS82
PROT
D307
HSS82
PROT
D011
HSS82 PROT
J001
L102
L202
L302
L001
470μH
L003
100μH
L002
100μH

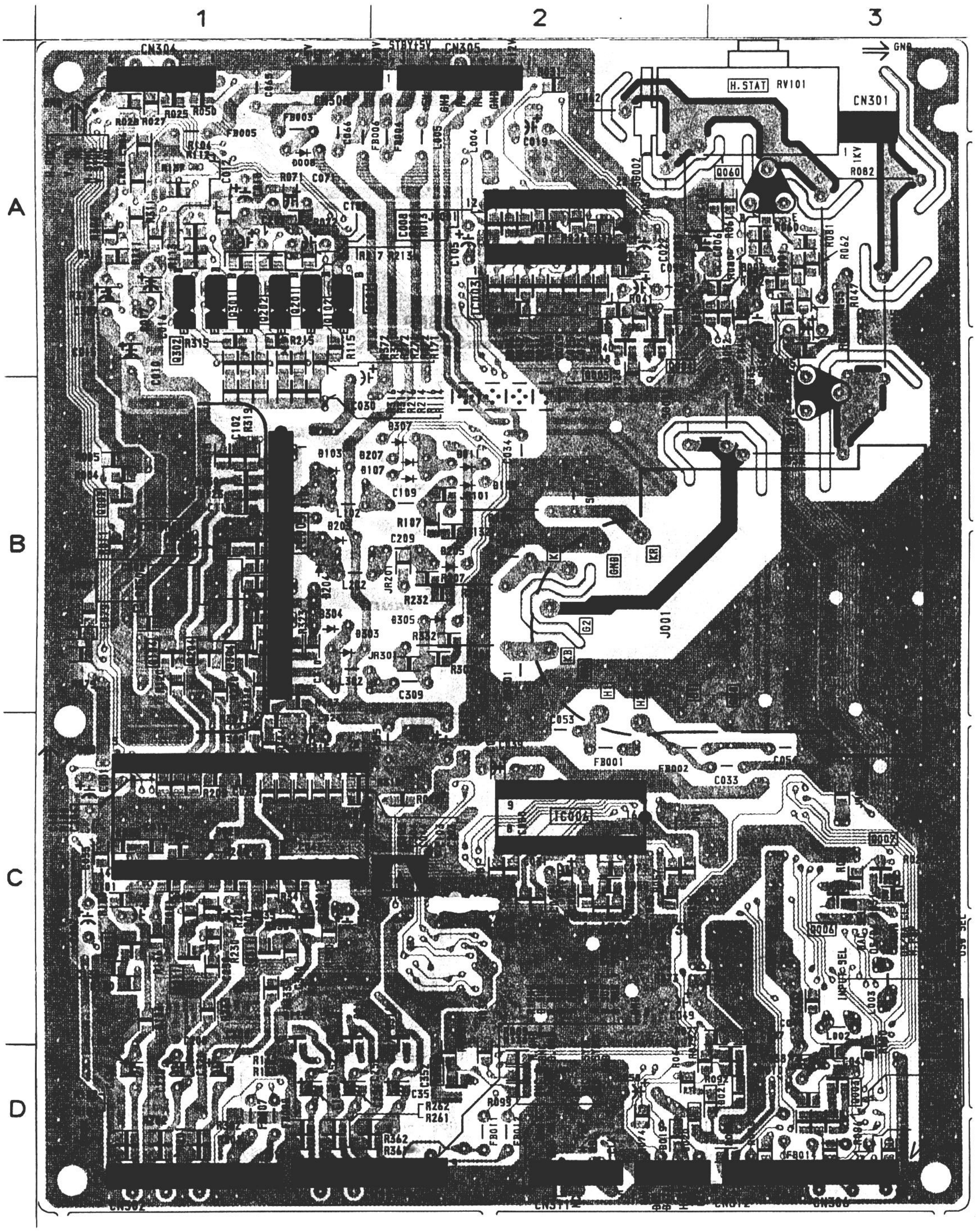
A (VIDEO AMP, RGB OUT)



24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
IC005
YP512
RGB-OUT
R.VBB
R.IN
R.E
R.OUT
GND
G.OUT
G.E
G.IN
G.VBB
GND
B.VBB
B.IN
B.E
B.OUT
VCC
L102
0.22uH
:AL1
R106
330
C109
0.1
250V
:MPS
D105
HSS82
D104
HSS82
PROT
D103
HSS82
PROT
L202
0.22uH
C209
0.1
250V
R206
D204
HSS82
PROT
D203
HSS82
PROT
D205
HSS82
PROT
L302
0.22uH
C309
0.1
250V
R306
D303
HSS82
PROT
D304
HSS82
PROT
+80V
C014
47
100V
:HT
D107
HSS82
PROT
D207
HSS82
PROT
FOCUS 2
FOCUS 1
JR101
0
:CHIP
R108
47
1/2V
:RC
R107
470k
:CHIP
R132
470k
:CHIP
SG101
J001
RCV
H.STAT
RV101
110M
C042
470p
2kV
CN301
2P
:VH
TO B BOARD
CN402
NC
1KV
JR201
0
:CHIP
R207
470k
:CHIP
R208
47
1/2V
:RC
R232
470k
:CHIP
SG201
C033
330p
500V
FB002
1.1uH
SG001
C040
0.047
2kV
R053
10k
1/2V
:RC
R015
2.2M
1V
:RN
SG002
R042
2.2M
1V
:RN
FB001
1.1uH
KR
KG
KB
G1
G2
JR301
0
:CHIP
R307
470k
:CHIP
D305
HSS82
PROT
R308
47
1/2V
:RC
SG301
R332
470k
:CHIP
D307
HSS82
PROT
+B
D011
HSS82 PROT
PICTURE
TUBE
20SQ4
RCV
TO B BOARD
FBT
R114
100k
:CHIP
R116
100k
:CHIP
R171
100k
:CHIP
R172
100k
:CHIP
R214
100k
:CHIP
Q202
2SA10910-TPE2
BUFF
R216
100k
:CHIP
R271
100k
:CHIP
R272
100k
:CHIP
R215
1k
R115
1k
C107
2.2
200V
:HT
R117
1k
C207
2.2
200V
:HT
C030
10
200V
R314
100k
:CHIP
R316
100k
:CHIP
R371
100k
:CHIP
R372
100k
:CHIP
R315
1k
C307
2.2
200V
:HT
R317
1k
R217
1k
Q010
2SC5022-02
G2-AMP
R055
1.8k
C080
22
25V
R046
10k
R048
3.3k
D001
MA110
5V
R071
4.7k
R072
6.8k
C071
47
16V
R113
2.2k
Q101
2SC2551O-TPE2
R-CUTOFF-AMP
Q102
2SA10910-TPE2
BUFF
R213
2.2k
Q201
2SC2551O-TPE2
G-CUTOFF-AMP
R313
2.2k
Q302
2SA10910-TPE2
BUFF
Q301
2SC2551O-TPE2
B-CUTOFF-AMP
+80V
R047
10M
:RN
R051
82k
R002
1M
R052
1k
:CHIP
C011
0.01
B:CHIP
IC010
NJM4558M-TE2
+12V
OUT
-5V
R042
1k
R040
10k
Q060
2SC5022-02
H.STAT-AMP
R121
1k
:CHIP
R112
1M
C104
0.01
B:CHIP
-5V
R104
1M
R111
68k
IC002
LM324BM-E2
RGB-CUTOFF-CONT
R009
1M
C003
0.1
B
L006
220uH
C004
47
16V
C034
0.001
500V
B
C044
0.01
B:CHIP
R070
1k
:CHIP
R080
3.3k
R081
10M
:RN
FB004
1.1uH
R041
68k
FB010
1.1uH
CN305
7P
WHT-L
:S-MICRO
TO B BOARD
CN606
STBY+5V
+5V
GND
H2
H1
GND
+12V
L004
220uH
R211
68k
C012
0.1
B
R311
68k
R304
1M
R312
1M
+12V
FB005
1.1uH
D008
HSS82
PROT
FB003
1.1uH
FB006
1.1uH
-5V
NC
+B (+180V)
NC
+80V
C045
0.001
500V
B
C046
0.001
500V
B
CN308
5P
WHT-L
:S-MICRO
TO B BOARD
CN608
R221
1k
:CHIP
C206
0.01
B:CHIP
R321
1k
:CHIP
C306
0.01
B:CHIP
STBY+5V
+5V
B-553331<U/C>-A.. AUTO
OUT)

A [VIDEO AMP, RGB OUT]

— A BOARD (Conductor side) —


1
2
3
A
B
C
D
CN304
STBY+5V
CN305
H.STAT
RV101
CN301
GND
1KV
Q060
R082
J001
G2
KR
GNB
IC006
FB001
FB002
C033
C309
C209
R187
JR201
R232
JR301
Q302
R315
C102
R319
INPUT SEL
L002
R099
FB011
R362
R262
R261
CN302
CN312

- ▒ : **Pattern from the side which enables seeing.**
- ░ : Pattern of the rear side.

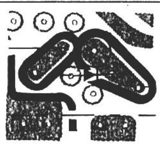
● A BOARD SEMICONDUC

IC	(Conductor Side)	(Component Side)
IC001	C–1	C–3
IC002		A–3
IC003	A–2	A–2
IC004		C–3
IC005	B–1	B–3
IC006	C–2	C–2
IC007		C–1
IC008		D–1
IC010		A–1
IC012		C–1

TRANSISTOR	(Conductor Side)	(Component Side)
Q002	B–1	
Q003	D–3	
Q006	C–3	
Q007	C–3	
Q008		D–1
Q009		C–1
Q010	B–3	B–1
Q060	A–3	A–1
Q101	A–1	A–2
Q102	A–1	A–2
Q104	B–1	
Q111	C–1	
Q201	A–1	A–3
Q202	A–1	A–3
Q204	B–1	
Q211	C–1	
Q301	A–1	A–3
Q302	A–1	A–3
Q304	B–1	
Q311	C–1	

DIODE	(Conductor Side)	(Component Side)
D001	A–3	

D002		
D003		
D004		
D005		
D007		
D008		
D011		
D012		
D013		
D014		
D015		
D016		
D018		
D019		
D020		
D021		
D022		
D101		
D103		
D104		
D105		
D107		
D111		
D201		
D203		
D204		
D205		
D207		
D211		
D301		
D303		
D304		
D305		
D307		
D311		
RV10		



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

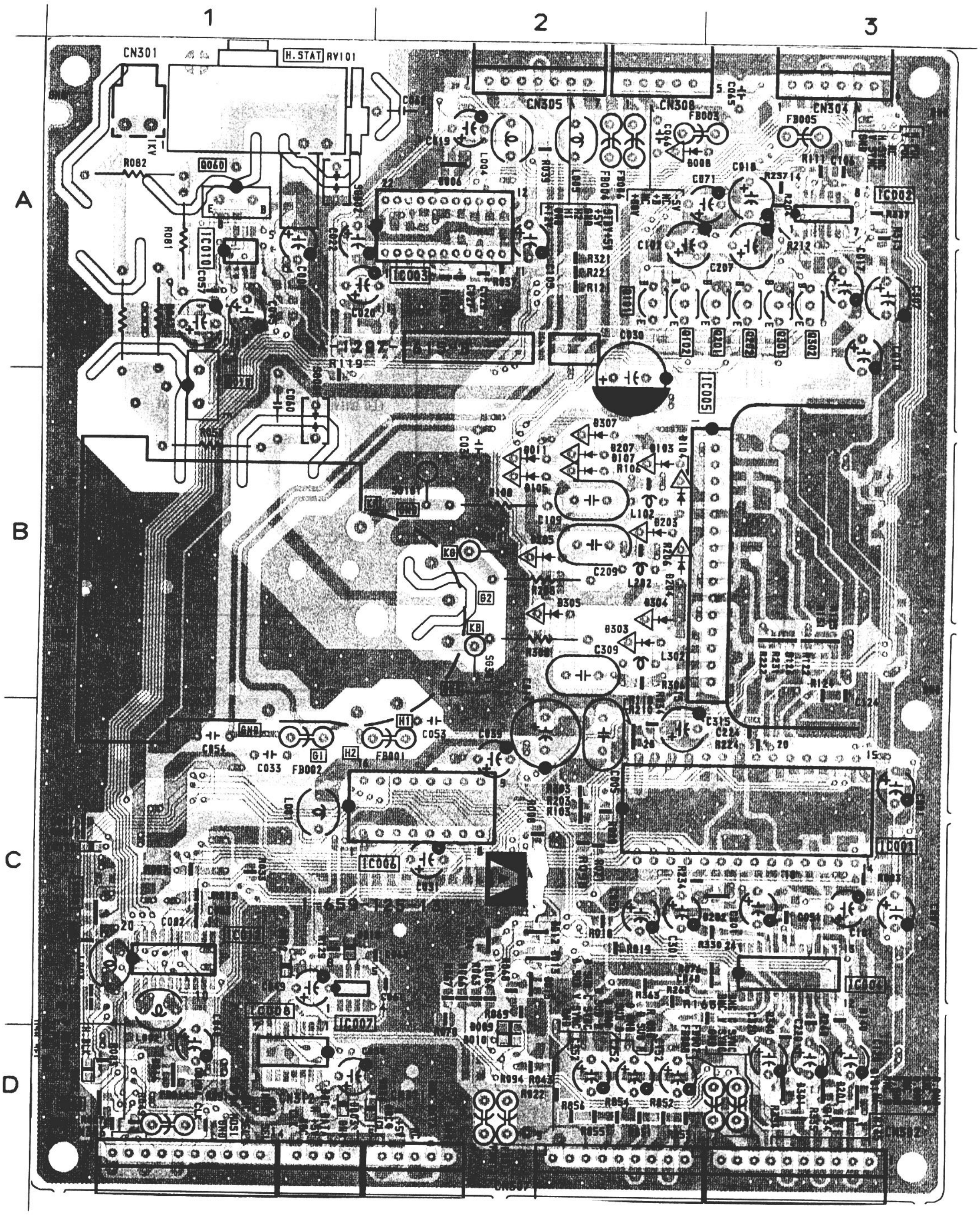
CONDUCTOR LOCATION

D002	C–2	
D003		D–1
D004		D–2
D005		C–1
D007	B–1	
D008	A–1	A–2
D011	B–2	B–2
D012		C–2
D013		C–2
D014		C–2
D015		C–2
D016		D–1
D018		D–1
D019	D–2	
D020	D–2	
D021	D–2	
D022		D–1
D101		D–3
D103	B–1	B–2
D104	B–1	B–2
D105	B–2	B–2
D107	B–1	B–2
D111	C–1	
D201		D–3
D203	B–1	B–2
D204	B–1	B–2
D205	B–2	B–2
D207	B–1	B–2
D211	C–1	
D301		D–3
D303	B–1	B–2
D304	B–1	B–2
D305	B–2	B–2
D307	B–2	B–2
D311	C–2	

VARIABLE RESISTOR

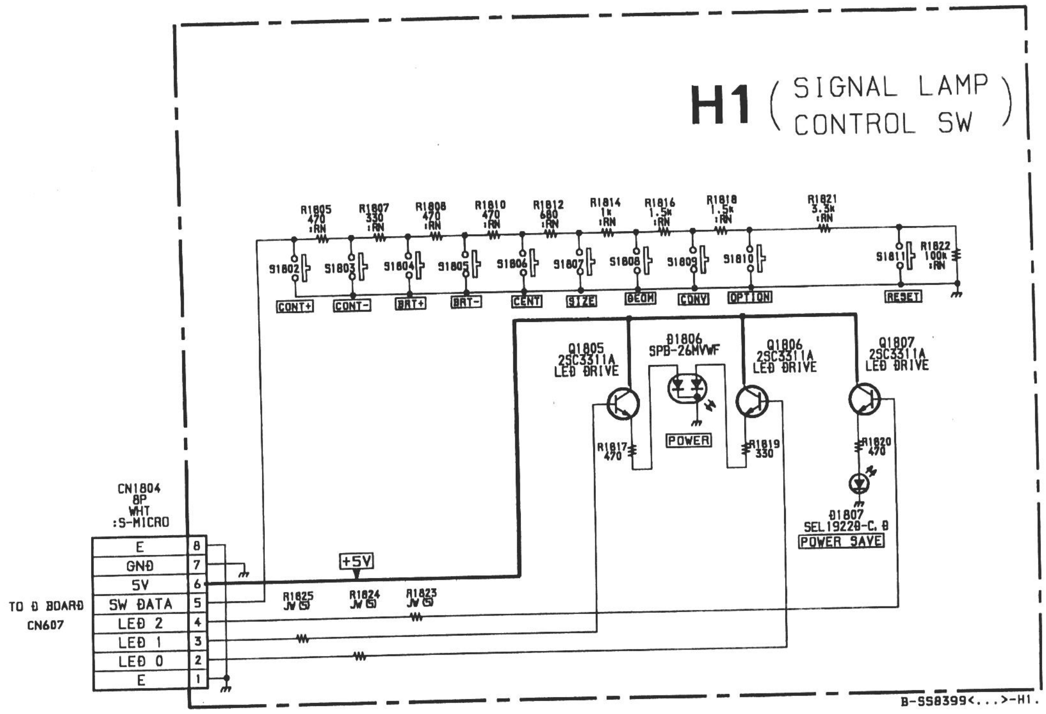
	(Conductor Side)	(Component Side)
RV101	A–3	A–1

— A BOARD (Component side) —

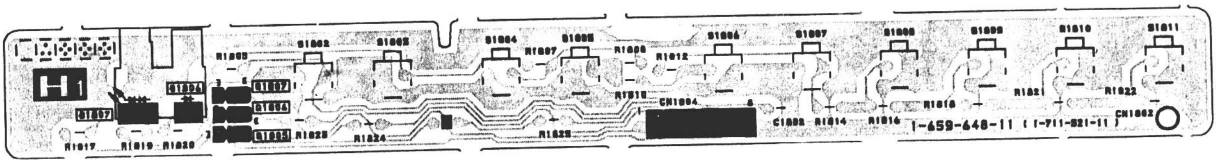

1
2
3
A
B
C
D
CN301
H.STAT
RV101
CN305
CN306
CN304
R082
R081
IC010
IC003
IC002
IC005
IC006
IC007
IC008
IC004
IC001
C030
C209
C309
C033
C053
C054
FB001
FB002
FB003
FB005
G1
G2
H1
H2
KB
L102
L202
L302
R119

- ▒ : Pattern from the side which enables seeing.
- ░ : Pattern of the rear side.

(3) Schematic Diagram of H1 Board


H1 (SIGNAL LAMP CONTROL SW)
R1805 470 :RN
R1807 330 :RN
R1808 470 :RN
R1810 470 :RN
R1812 680 :RN
R1814 1k :RN
R1816 1.5k :RN
R1818 1.5k :RN
R1821 3.3k :RN
R1822 100k :RN
S1802
S1803
S1804
S1805
S1806
S1807
S1808
S1809
S1810
S1811
CONT+
CONT-
BRT+
BRT-
CENT
SIZE
GEOM
CONV
OPTION
RESET
Q1805 2SC3311A LED DRIVE
D1806 SPB-26MVWF
Q1806 2SC3311A LED DRIVE
Q1807 2SC3311A LED DRIVE
R1817 470
POWER
R1819 330
R1820 470
D1807 SEL1922D-C, D
POWER SAVE
CN1804 8P WHT :S-MICRO
E 8
GND 7
5V 6
SW DATA 5
LED 2 4
LED 1 3
LED 0 2
E 1
TO D BOARD CN607
+5V
R1825 JW (5)
R1824 JW (5)
R1823 JW (5)
B-SS8399<...>-H1.

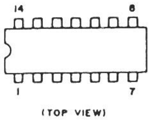
— H1 BOARD —


H1
S1802
S1803
S1804
S1805
S1806
S1807
S1808
S1809
S1810
S1811
R1805
R1807
R1808
R1812
R1810
R1821
R1822
R1818
D1806
D1807
D1806
Q1807
Q1806
Q1805
CN1804
CN1802
C1802
R1814
R1816
R1817
R1819
R1820
R1823
R1824
R1825
1-659-648-11 (1-711-821-11)

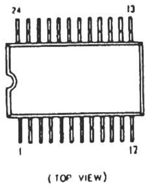
Schematic diagram
H1 board ➡

5-4. SEMICONDUCTORS

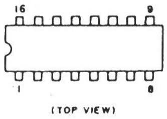
BA10324A
BA10339


14
8
1
7
(TOP VIEW)

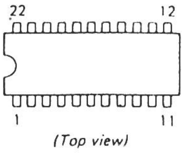
BA7657F-E2


24
13
1
12
(TOP VIEW)

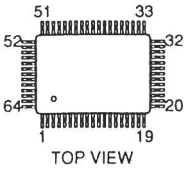
CD74HC4046AM
CD74HC4046AM-E2/SO
LSC4312P
TL494CN


16
9
1
8
(TOP VIEW)

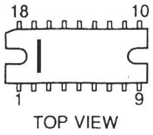
CXA2016S


22
12
1
11
(Top view)

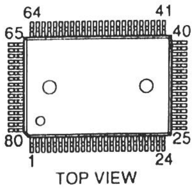
CXD8478Q


51
33
52
32
64
20
1
19
TOP VIEW

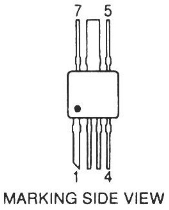
DM-57


18
10
1
9
TOP VIEW

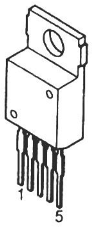
HD6433337WA02FP


64
41
65
40
80
25
1
24
TOP VIEW

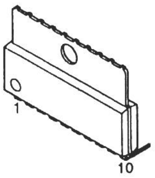
IRSY5305


7
5
1
4
MARKING SIDE VIEW

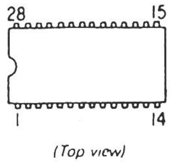
LA6500-FA



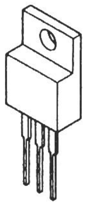
LA6510



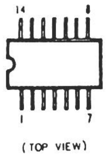
LM2283


28
15
1
14
(Top view)

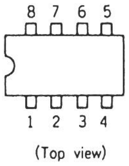
LM2940CT-12FL91
L7805CV
NJM78M05FA
TA7805S
μPC7805H



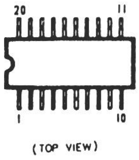
LM324M-FL63
MC14066BF
SN74HC02ANS
SN74HC02ANS-E20
SN74HC74ANS
SN74HC74ANS-E20


14
8
1
7
(TOP VIEW)

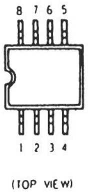
M5218AP
MM1170BFB
NJM4558D


8 7 6 5
1 2 3 4
(Top view)

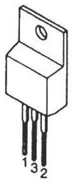
M62352FP
M62352FP-75ND


20
11
1
10
(TOP VIEW)

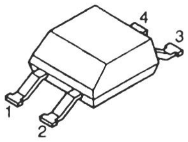
NJM4558M-TE2
ST24C08FM6TR
TL082CPS-E20
TL082M
μPC4558G2
24LC21T/SN


8 7 6 5
1 2 3 4
(TOP VIEW)

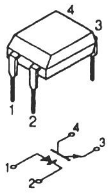
NJM7905FA
μPC7905H



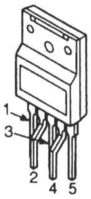
PC123F2
PC123FY2



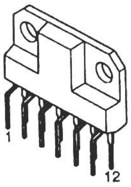
PS2561L1-1-V



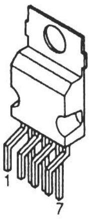
SI3050F



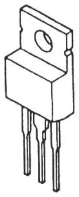
SLA5021



TDA8172

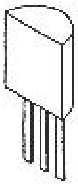


TDA9102C

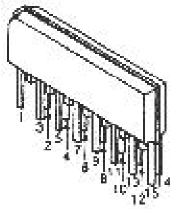


m

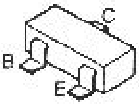
µPC1093J



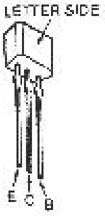
VPS12


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

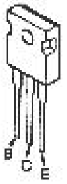
DTC124EKA-T146
2SA1037K-T-146-QR
2SA1162-G
2SA1462-Y33
2SC1623-L5L6
2SC2412K-T-146-QR



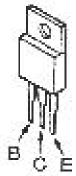
DTC124ESA
2SA1048
2SA1175-HFE
2SA1309A
2SC2785-HFE
2SC3311A-QRSTA


LETTER SIDE
E
C
B

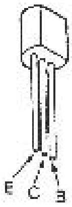
FS16SM-10-A6
2SC5301-CC



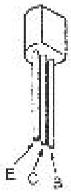
IRFI9630GS-LF
2SC3746
2SC4686A(LB SONY)
2SJ449



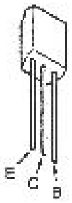
2SA1091-Q
2SC2551-Q



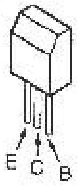
2SA1371
2SA1371-D



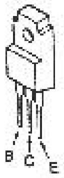
2SC2458-YGR



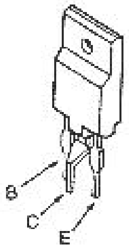
2SC3209LK-TP
2SD774-T-3
2SD774-34



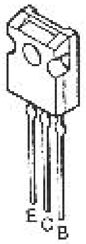
2SC4052MNPR



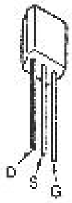
2SC4632LS-CB7



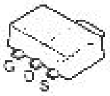
2SC4833MNP



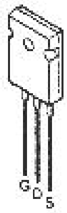
2SK669



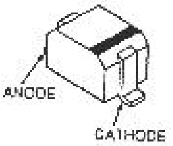
2SK1076



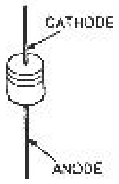
2SK2077(LB SONY)



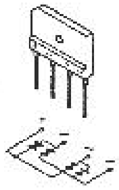
DTZ4.7B
DTZ4.7C
DTZ5.1B
MA110


ANODE
CATHODE

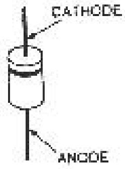
D1NS4
MTZJ-4.7C
MTZJ-5.1A
RD10ES-B2
RD12ES-B2
RD16ES-B3
RD18ES-B2
RD24ES-B3
RD3.3ES-B2
RD4.7ES-B2
RD5.1ES-B1
RD5.1ES-B2
RD5.6ES-B2
RD6.2ES-B2
RD9.1ES-B2
1SS119-25


CATHODE
ANODE

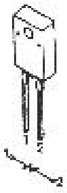
D2L40-TA
D4SB60L



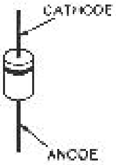
D2S4MF


CATHODE
ANODE

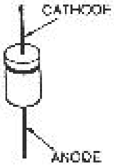
D5L60



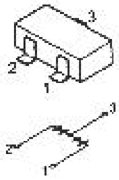
EGP10D
S2LA20F


CATHODE
ANODE

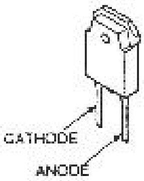
EGP20G
ERA22-08
ERB91-02
GP08D
GP08DPKG23
HSS82
HZT33-02
MTZJ-T-77-4.7C
RGP02-20EL-6394
10E2


CATHODE
ANODE

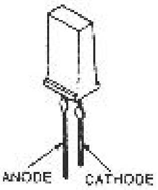
1SS226



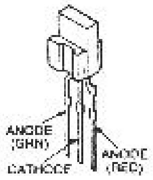
5TUZ52


CATHODE
ANODE

SEL1922D-C


ANODE
CATHODE

SPB-26MVWF


ANODE (GRN)
CATHODE
ANODE (RED)

SECTION 6

EXPLODED VIEWS

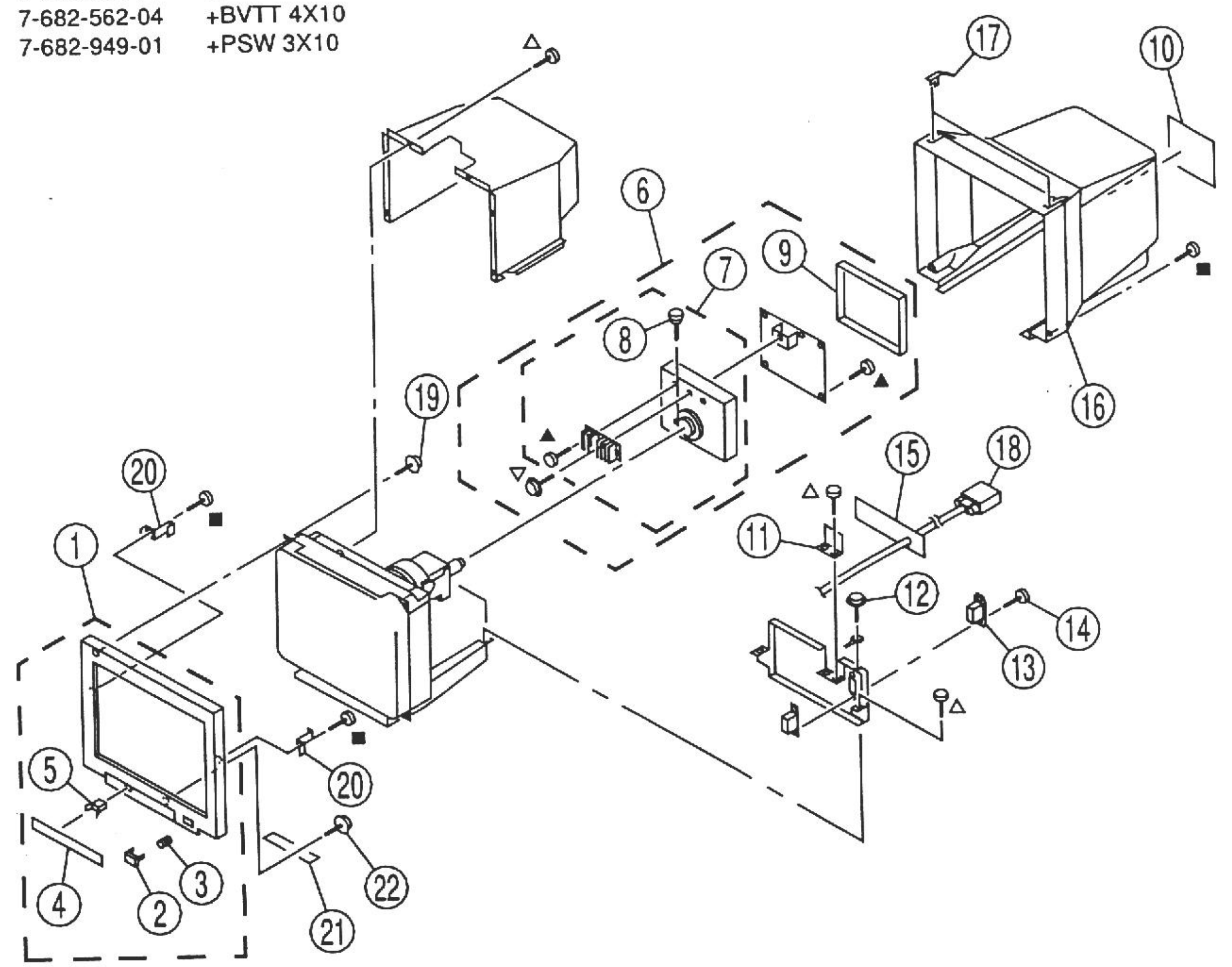
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. CHASSIS

▲	7-685-646-79	+BVTP 3X8
■	7-685-663-71	+BVTP 4X16
△	7-682-562-04	+BVTT 4X10
▽	7-682-949-01	+PSW 3X10



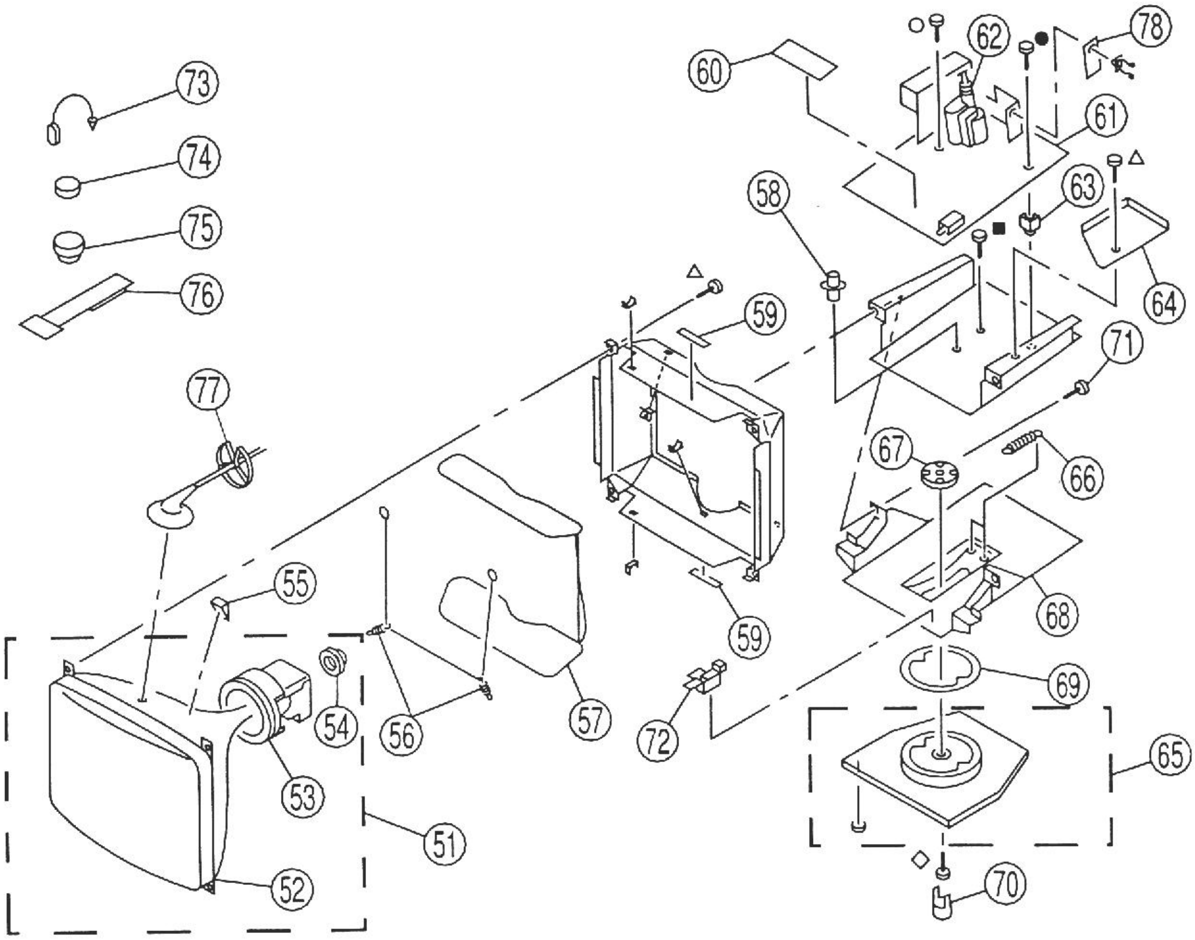
REF.NO.	PART NO.	DESCRIPTION	REMARK
1	* X-4033-387-1	BEZEL ASSY	2~5
2	* 4-052-513-01	BUTTON, POWER	
3	4-042-593-11	SPRING, COMPRESSION	
4	* 4-052-514-01	DOOR	
5	4-392-036-01	CATCHER, PUSH	
6	* 8-933-153-00	A BLOCK ASSY (A BOARD)	7~9
7	* X-4033-434-1	VIDEO BLOCK ASSY	8
8	4-041-627-01	SCREW (M4X20), HEXAGON HEAD	
9	* 4-050-693-11	SHIELD, VIDEO	
10	* 4-053-289-01	LABEL, INFORMATION	
11	* 4-051-440-01	HOLDER, CABLE	
12	4-389-025-01	SCREW (M4) (EXT TOOTH WASHER	
13	⚠ 1-251-382-22	INLET, AC 3P(WITH NOISE FILTE)	
14	4-052-345-01	SCREW, (3X8) (+K), TAPPING	
15	4-051-698-01	SHEET, CONNECTOR	
16	* 4-052-494-11	CABINET	
17	* 4-052-487-11	COVER, SCREW	
18	1-776-033-41	CABLE	
19	4-365-808-01	SCREW (5), TAPPING	
20	* 4-051-566-11	HOOK (20)	
21	* 8-933-195-00	H1 BOARD, COMPLETE	
22	4-029-432-01	SCREW (3X12), (+) BVWHTP	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

6-2. PICTURE TUBE

●	7-685-648-79	+BVTP 3X12
■	7-685-663-71	+BVTP 4X16
○	7-685-650-79	+BVTP 3X16
△	7-682-562-04	+BVTT 4X10
◇	7-685-664-79	+BVTP 4X20



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	⚠ 8-736-050-95	ITC ASSY (20SQ4-R3)	52~54
52	⚠ 8-736-050-05	PICTURE TUBE 20SQ4 (SD-278)	
53	⚠ 1-451-438-11	DEFLECTION YOKE,TRINTRON COLOR	
54	⚠ 8-453-006-11	NECK ASSY, PICTURE TUBE (NA3013-M)	
55	4-040-897-01	SPACER, DY	
56	4-369-318-00	SPRING, TENSION	
57	1-406-790-71	COIL, DEMAGNETIZATION	
58	*4-303-473-00	SUPPORT, PC	
59	*9-911-844-99	CUSHION	
60	*8-933-155-00	N BOARD, COMPLETE	
61	*8-933-166-00	D BOARD, COMPLETE	
62	⚠ X-4033-530-1	TRANFSORMER ASSY, FLYBACK (NX-4140//J1A4)	
63	*4-382-848-01	HOLDER, PCB	
64	*4-051-908-01	SHIELD (D3)	
65	*X-4033-386-1	STAND BASE ASSY	
66	4-046-901-01	SPRING, TENSION	
67	*4-050-692-11	STOPPER (A)	
68	*4-052-492-11	COVER, BOTTOM	
69	*4-041-625-21	RING, TILT SWIVEL	
70	*4-041-621-21	STOPPER (B)	
71	4-389-025-11	SCREW (M4) (EXT TOOTH WASHER)	
72	4-051-438-11	SLIDER	
73	4-308-870-00	CLIP, LEAD WIRE	
74	1-452-032-00	MAGNET,DISC ; 10mm ϕ	
75	1-452-094-00	MAGNET, ROTATABLE DISK ; 15mm ϕ	
76	X-403-058-41	PERMALLOY ASSY, CORRECTION	
77	3-704-372-31	HOLDER, HV CABLE	
78	*4-052-771-01	SHIELD, D6	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

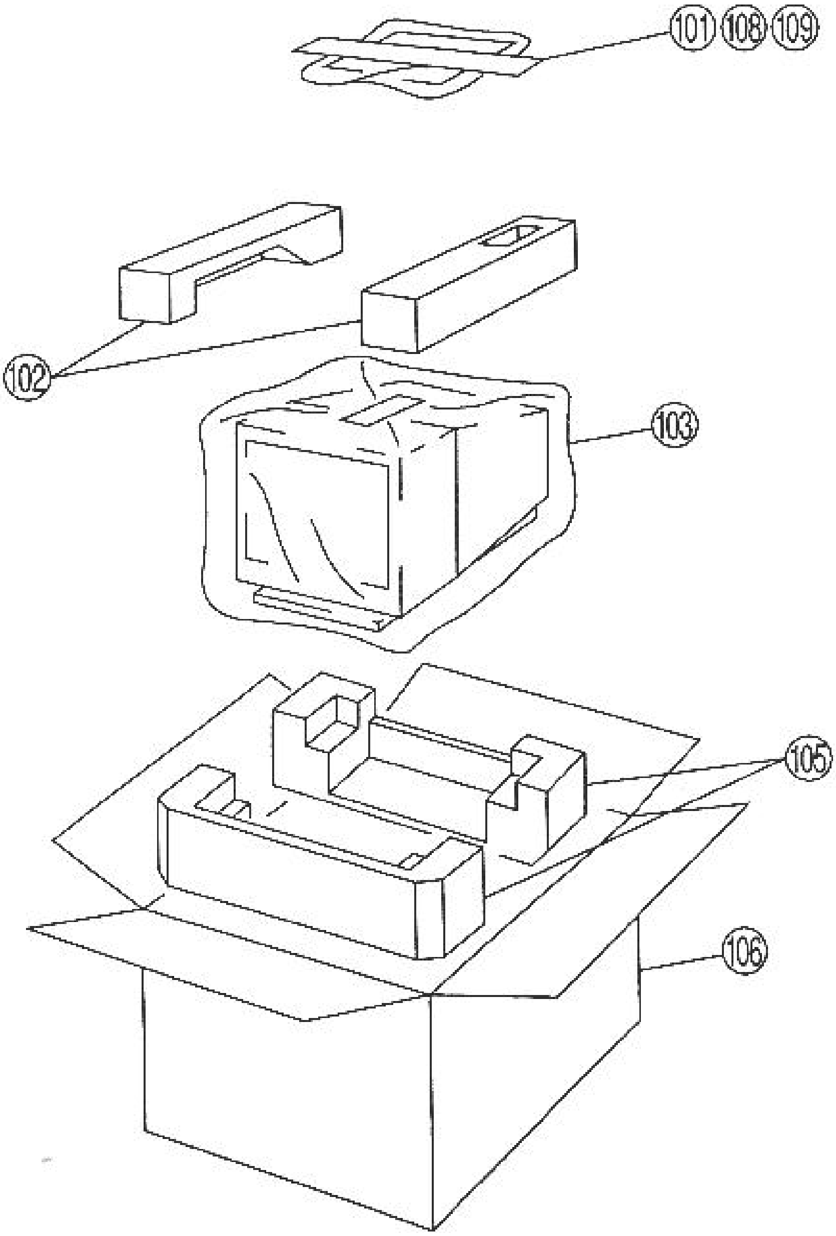
The components identified by Ħ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS
  MF : μF
- COILS
  MMH : mH
  UH : μH

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*8-933-153-00	A BLOCK ASSY (A BOARD)	
		******************************	
	4-051-865-01	HEAT SINK (A)	
	7-682-950-01	SCREW +PSW 3X12	
		CAPACITOR	
C001	1-107-909-11	ELECT 47MF	20% 16V
C002	1-163-133-00	CERAMIC CHIP 470pF	5% 50V
C003	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C004	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C005	1-137-528-11	FILM 0.1MF	10% 250V
C006	1-126-967-11	ELECT 47MF	20% 16V
C007	1-107-907-11	ELECT 22MF	20% 25V
C008	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C009	1-104-665-11	ELECT 100MF	20% 25V
C010	1-107-909-11	ELECT 47MF	20% 16V
C011	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C012	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C013	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C014	1-107-932-11	ELECT 47MF	20% 100V
C015	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C019	1-126-963-11	ELECT 4.7MF	20% 50V
C020	1-126-963-11	ELECT 4.7MF	20% 50V
C021	1-163-001-11	CERAMIC CHIP 220pF	10% 50V
C022	1-126-967-11	ELECT 47MF	20% 16V
C023	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C024	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C025	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C026	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C027	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
C028	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C030	1-107-746-11	ELECT 10MF	20% 200V
C031	1-126-967-11	ELECT 47MF	20% 16V
C032	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C033	1-102-030-00	CERAMIC 330pF	10% 500V
C034	1-164-318-11	CERAMIC CHIP 0.001MF	10% 500V
C035	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C036	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C038	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C039	1-126-967-11	ELECT 47MF	20% 16V
C040	1-128-551-11	ELECT 22MF	20% 25V
C042	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C043	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C044	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C047	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C048	1-163-133-00	CERAMIC CHIP 470pF	5% 50V
C049	1-124-903-11	ELECT 1MF	20% 50V
C050	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C051	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C052	1-126-967-11	ELECT 47MF	20% 16V
C055	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C058	1-126-967-11	ELECT 47MF	20% 16V
C060	1-162-114-00	CERAMIC 0.0047MF	2KV
C062	1-162-134-11	CERAMIC 470pF	10% 2KV
C064	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C065	1-162-318-11	CERAMIC 0.001MF	10% 500V
C066	1-162-318-11	CERAMIC 0.001MF	10% 500V
C068	1-163-251-11	CERAMIC CHIP 100pF	5% 50V
C071	1-107-909-11	ELECT 47MF	20% 16V
C079	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C100	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C101	1-107-902-11	ELECT 1MF	20% 50V
C102	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C103	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C104	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C105	1-124-903-11	ELECT 1MF	20% 50V
C106	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C107	1-107-949-11	ELECT 2.2MF	20% 200V
C109	1-137-528-11	FILM 0.1MF	10% 250V
C110	1-163-239-11	CERAMIC CHIP 33pF	5% 50V
C120	1-126-967-11	ELECT 47MF	20% 16V
C124	1-163-125-00	CERAMIC CHIP 220pF	5% 50V
C130	1-163-227-11	CERAMIC CHIP 10pF	0.5pF 50V
C151	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C152	1-126-967-11	ELECT 47MF	20% 16V
C200	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C201	1-107-902-11	ELECT 1MF	20% 50V
C202	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C203	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C204	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C206	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C207	1-107-949-11	ELECT 2.2MF	20% 200V
C209	1-137-528-11	FILM 0.1MF	10% 250V
C210	1-163-239-11	CERAMIC CHIP 33pF	5% 50V

6-3. PACKING MATERIALS



REF.NO.	PART NO.	DESCRIPTION	REMARK
101	*3-856-326-11	MANUAL, INSTRUCTION	
102	*4-053-444-01	CUSHION (UPPER)(ASSY)	
103	*4-047-293-01	BAG, POLYETHYLENE	
105	*4-053-445-01	CUSHION (LOWER)(ASSY)	
106	*4-053-814-01	INDIVIDUAL CARTON	
108	1-765-718-11	CORD SET, POWER	
109	1-774-648-11	ADAPTOR, CONVERSION	

A

Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
C220	1-126-967-11	ELECT 47MF	20% 16V
C224	1-163-125-00	CERAMIC CHIP 220pF	5% 50V
C230	1-163-227-11	CERAMIC CHIP 10pF	0.5pF 50V
C251	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C252	1-126-967-11	ELECT 47MF	20% 16V
C300	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C301	1-107-902-11	ELECT 1MF	20% 50V
C302	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C303	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C304	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C306	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C307	1-107-949-11	ELECT 2.2MF	20% 200V
C309	1-137-528-11	FILM 0.1MF	10% 250V
C310	1-163-239-11	CERAMIC CHIP 33pF	5% 50V
C314	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C315	1-107-889-11	ELECT 220MF	20% 16V
C320	1-126-967-11	ELECT 47MF	20% 16V
C324	1-163-125-00	CERAMIC CHIP 220pF	5% 50V
C330	1-163-227-11	CERAMIC CHIP 10pF	0.5pF 50V
C351	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C352	1-126-967-11	ELECT 47MF	20% 16V

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN301*	1-766-179-11	PIN, CONNECTOR (PC BOARD) 2P	
CN302*	1-564-525-11	PLUG, CONNECTOR 10P	
CN304*	1-564-521-11	PLUG, CONNECTOR 6P	
CN305*	1-564-522-11	PLUG, CONNECTOR 7P	
CN306*	1-564-525-11	PLUG, CONNECTOR 10P	
CN307*	1-564-524-11	PLUG, CONNECTOR 9P	
CN308*	1-564-520-11	PLUG, CONNECTOR 5P	
CN311*	1-564-520-11	PLUG, CONNECTOR 5P	
CN312*	1-564-519-11	PLUG, CONNECTOR 4P	

DIODE

REF.NO.	PART NO.	DESCRIPTION	REMARK
D001	8-719-404-46	DIODE MA110	
D002	8-719-404-46	DIODE MA110	
D003	8-719-976-99	DIODE DTZ5.1B	
D004	8-719-976-99	DIODE DTZ5.1B	
D005	8-719-404-46	DIODE MA110	
D007	8-719-404-46	DIODE MA110	
D008	8-719-970-83	DIODE HSS82	
D011	8-719-970-83	DIODE HSS82	
D012	8-719-800-76	DIODE 1SS226	
D013	8-719-800-76	DIODE 1SS226	
D014	8-719-800-76	DIODE 1SS226	
D015	8-719-800-76	DIODE 1SS226	
D016	8-719-800-76	DIODE 1SS226	
D018	8-719-976-99	DIODE DTZ5.1B	
D019	8-719-404-46	DIODE MA110	
D020	8-719-404-46	DIODE MA110	
D021	8-719-404-46	DIODE MA110	
D022	8-719-404-46	DIODE MA110	
D101	8-719-800-76	DIODE 1SS226	
D103	8-719-970-83	DIODE HSS82	
D104	8-719-970-83	DIODE HSS82	
D105	8-719-970-83	DIODE HSS82	
D107	8-719-970-83	DIODE HSS82	
D111	8-719-800-76	DIODE 1SS226	
D201	8-719-800-76	DIODE 1SS226	
D203	8-719-970-83	DIODE HSS82	
D204	8-719-970-83	DIODE HSS82	
D205	8-719-970-83	DIODE HSS82	
D207	8-719-970-83	DIODE HSS82	
D211	8-719-800-76	DIODE 1SS226	
D301	8-719-800-76	DIODE 1SS226	
D303	8-719-970-83	DIODE HSS82	
D304	8-719-970-83	DIODE HSS82	
D305	8-719-970-83	DIODE HSS82	
D307	8-719-970-83	DIODE HSS82	
D311	8-719-800-76	DIODE 1SS226	

FERRITE BEAD

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB001	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB002	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB003	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB004	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB005	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB006	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB007	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB008	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB011	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB012	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB014	1-412-911-11	INDUCTOR, FERRITE BEAD	

IC

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC001	8-759-358-83	IC LM2283	
IC002	8-759-502-82	IC LM324M-FL63	
IC003	8-752-073-52	IC CXA2016S	
IC004	8-759-360-07	IC BA7657F-E2	
IC005	8-749-011-84	IC VPS12	
	7-682-950-01	SCREW +PSW 3X12 (IC005)	
IC006	8-759-359-03	IC LSC4312P	
IC007	8-759-370-08	IC 24LC21T/SN	
IC008	8-759-008-67	IC MC14066BF	
IC010	8-759-100-96	IC µPC4558G2	
IC012	8-759-044-65	IC M62352FP	

JACK

REF.NO.	PART NO.	DESCRIPTION	REMARK
J001	⚠1-251-116-12	SOCKET, PICTURE TUBE	

CHIP CONDUCTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR001	1-216-295-91	CONDUCTOR, CHIP	
JR002	1-216-295-91	CONDUCTOR, CHIP	
JR101	1-216-295-91	CONDUCTOR, CHIP	
JR201	1-216-295-91	CONDUCTOR, CHIP	
JR301	1-216-295-91	CONDUCTOR, CHIP	

A

COIL

REF.NO.	PART NO.	DESCRIPTION	REMARK
L001	1-410-682-31	INDUCTOR 470μH	
L002	1-410-645-31	INDUCTOR 100μH	
L003	1-410-645-32	INDUCTOR 100μH	
L004	1-410-678-41	INDUCTOR 220μH	
L005	1-410-678-31	INDUCTOR 220μH	
L102	1-414-137-31	INDUCTOR 0.22μH	
L202	1-414-137-31	INDUCTOR 0.22μH	
L302	1-414-137-31	INDUCTOR 0.22μH	

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q002	8-729-216-22	TRANSISTOR 2SA1162-G	
Q003	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q006	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q007	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q008	8-729-216-22	TRANSISTOR 2SA1162-G	
Q009	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q010	8-729-823-81	TRANSISTOR 2SC4632LS-CB7	
Q060	8-729-823-81	TRANSISTOR 2SC4632LS-CB7	
Q101	8-729-255-12	TRANSISTOR 2SC2551-O	
Q102	8-729-200-17	TRANSISTOR 2SA1091-O	
Q104	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q111	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q201	8-729-255-12	TRANSISTOR 2SC2551-O	
Q202	8-729-200-17	TRANSISTOR 2SA1091-O	
Q204	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q211	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q301	8-729-255-12	TRANSISTOR 2SC2551-O	
Q302	8-729-200-17	TRANSISTOR 2SA1091-O	
Q304	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q311	8-729-112-65	TRANSISTOR 2SA1462-Y33	

RESISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
R001	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R002	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R003	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R004	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R005	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R006	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R007	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R008	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R009	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R010	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R011	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R012	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R013	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R014	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R015	1-211-885-21	METAL 2.2M 5% 1W	
R016	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R017	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R018	1-216-295-91	CONDUCTOR, CHIP	
R019	1-216-295-91	CONDUCTOR, CHIP	
R020	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R021	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R023	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R024	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R025	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R026	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R027	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R028	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R029	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R030	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R031	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R032	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R033	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R034	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R035	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R036	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R037	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R038	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R039	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R042	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R044	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R045	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R046	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R047	1-211-895-11	METAL 10M 10% 1/4W	
R048	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R049	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R050	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R051	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R052	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R053	1-202-830-00	SOLID 10K 20% 1/2W	
R054	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R055	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R056	1-218-768-11	METAL CHIP 470K 0.50% 1/10W	
R057	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
R058	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R059	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
R060	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R061	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R062	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R063	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R064	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R067	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R068	1-216-025-91	METAL GLAZE 100 5% 1/10W	
R071	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R072	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R073	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R074	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R075	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R076	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R077	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R078	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R079	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R080	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R081	1-211-895-11	METAL 10M 10% 1/4W	
R082	1-211-885-21	METAL 2.2M 5% 1W	
R083	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R084	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R085	1-216-049-91	METAL GLAZE 1K 5% 1/10W	

A

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R087	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R089	1-216-025-91	METAL GLAZE	100	5%	1/10W
R090	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R091	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R093	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R096	1-216-025-91	METAL GLAZE	100	5%	1/10W
R097	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R098	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R101	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R102	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R103	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R104	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R106	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R107	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R108	1-247-735-11	SOLID	47	20%	1/2W
R109	1-216-039-00	METAL GLAZE	390	5%	1/10W
R111	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R112	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R113	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R114	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R115	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R116	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R117	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R120	1-216-017-91	METAL GLAZE	47	5%	1/10W
R121	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R122	1-216-037-00	METAL GLAZE	330	5%	1/10W
R123	1-216-017-91	METAL GLAZE	47	5%	1/10W
R124	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R125	1-216-041-00	METAL GLAZE	470	5%	1/10W
R126	1-216-041-00	METAL GLAZE	470	5%	1/10W
R127	1-216-041-00	METAL GLAZE	470	5%	1/10W
R130	1-216-029-00	METAL GLAZE	150	5%	1/10W
R131	1-216-037-00	METAL GLAZE	330	5%	1/10W
R132	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R134	1-216-295-91	CONDUCTOR, CHIP			
R140	1-216-009-00	METAL GLAZE	22	5%	1/10W
R141	1-216-009-00	METAL GLAZE	22	5%	1/10W
R150	1-216-009-00	METAL GLAZE	22	5%	1/10W
R161	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R162	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R163	1-216-009-00	METAL GLAZE	22	5%	1/10W
R171	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R172	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R180	1-216-041-00	METAL GLAZE	470	5%	1/10W
R201	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R202	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R203	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R204	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R206	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R207	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R208	1-247-735-11	SOLID	47	20%	1/2W
R209	1-216-039-00	METAL GLAZE	390	5%	1/10W
R211	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R212	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R213	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R214	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R215	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R216	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R217	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R220	1-216-017-91	METAL GLAZE	47	5%	1/10W
R221	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R222	1-216-037-00	METAL GLAZE	330	5%	1/10W
R223	1-216-017-91	METAL GLAZE	47	5%	1/10W
R224	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R230	1-216-029-00	METAL GLAZE	150	5%	1/10W
R231	1-216-037-00	METAL GLAZE	330	5%	1/10W
R232	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R240	1-216-009-00	METAL GLAZE	22	5%	1/10W
R241	1-216-009-00	METAL GLAZE	22	5%	1/10W
R250	1-216-009-00	METAL GLAZE	22	5%	1/10W
R261	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R262	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R263	1-216-009-00	METAL GLAZE	22	5%	1/10W
R271	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R272	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R280	1-216-041-00	METAL GLAZE	470	5%	1/10W
R301	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R302	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R303	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R304	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R306	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R307	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R308	1-247-735-11	SOLID	47	20%	1/2W
R309	1-216-039-00	METAL GLAZE	390	5%	1/10W
R311	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R312	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R313	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R314	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R315	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R316	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R317	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R318	1-216-039-00	METAL GLAZE	390	5%	1/10W
R319	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R320	1-216-017-91	METAL GLAZE	47	5%	1/10W
R321	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R322	1-216-037-00	METAL GLAZE	330	5%	1/10W
R323	1-216-017-91	METAL GLAZE	47	5%	1/10W
R324	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R330	1-216-029-00	METAL GLAZE	150	5%	1/10W
R331	1-216-037-00	METAL GLAZE	330	5%	1/10W
R332	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R334	1-216-295-91	CONDUCTOR, CHIP			
R340	1-216-009-00	METAL GLAZE	22	5%	1/10W
R341	1-216-009-00	METAL GLAZE	22	5%	1/10W
R350	1-216-009-00	METAL GLAZE	22	5%	1/10W
R361	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R362	1-216-631-11	METAL CHIP	150	0.50%	1/10W
R363	1-216-009-00	METAL GLAZE	22	5%	1/10W
R371	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R372	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R380	1-216-041-00	METAL GLAZE	470	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
		VARIABLE RESISTOR			
RV101	1-223-410-11	RES, ADJ, METAL FILM 110M (H.STAT)			
		SPARK GAP			
SG001	1-519-422-11	GAP, SPARK			
SG002	1-519-422-11	GAP, SPARK			
SG101	1-519-504-11	GAP, DISCHARGE			
SG201	1-519-504-11	GAP, DISCHARGE			
SG301	1-519-504-11	GAP, DISCHARGE			

* * *

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*8-933-166-00	D BOARD, COMPLETE			
	2-371-561-00	BUSHING (P), INSULATING			
	3-710-578-01	COVER, VOLUME, 6 MOLD			
	4-034-094-01	SHEET, INSULATOR			
	*4-043-154-01	HOLDER, IC			
	*4-043-990-01	HEAT SINK			
	4-051-602-11	SHEET, RADIATION			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	4-389-026-11	SHEET, BN			
	4-812-134-00	RIVET (DIA. 3.5), NYLON			
		CAPACITOR			
C400	1-137-368-11	FILM	0.0047MF	5%	50V
C401	1-137-372-11	FILM	0.022MF	5%	50V
C402	1-136-173-00	FILM	0.47MF	5%	50V
C403	1-128-528-11	ELECT	470MF	20%	25V
C404	1-136-169-00	FILM	0.22MF	5%	50V
C405	1-137-368-11	FILM	0.0047MF	5%	50V
C406	1-102-244-00	CERAMIC	220pF	10%	500V
C407	1-106-375-12	MYLAR	0.022MF		200V
C408	1-106-375-12	MYLAR	0.022MF		200V
C409	1-104-664-11	ELECT	47MF	20%	25V
C411	1-107-433-11	FILM	0.006MF	3%	2KV
C412	1-129-898-00	FILM	0.0022MF	10%	630V
C413	1-162-558-11	CERAMIC	100pF	10%	2KV
C414	1-107-648-91	ELECT	100MF	20%	200V
C415	1-162-558-11	CERAMIC	100pF	10%	2KV
C416	1-162-114-00	CERAMIC	0.0047MF		2KV
C417	1-102-106-00	CERAMIC	100pF	10%	50V
C418	1-104-664-11	ELECT	47MF	20%	25V
C419	1-137-370-11	FILM	0.01MF	5%	50V
C420	1-126-967-11	ELECT	47MF	20%	50V
C421	1-137-368-11	FILM	0.0047MF	5%	50V
C422	1-126-964-11	ELECT	10MF	20%	50V
C423	1-137-399-11	FILM	0.1MF	5%	50V
C424	1-137-371-11	FILM	0.015MF	5%	50V
C425	1-104-664-11	ELECT	47MF	20%	25V
C426	1-137-364-11	FILM	0.001MF	5%	50V
C428	1-106-359-00	MYLAR	0.0047MF	10%	200V
C429	1-137-364-11	FILM	0.001MF	5%	50V
C430	1-107-648-91	ELECT	100MF	20%	200V
C431	1-136-105-00	FILM	0.33MF	5%	200V
C432	1-113-714-11	FILM	2000pF	3%	1.2KV
C433	1-137-368-11	FILM	0.0047MF	5%	50V
C435	1-137-399-11	FILM	0.1MF	5%	50V
C436	1-137-399-11	FILM	0.1MF	5%	50V
C437	1-126-963-11	ELECT	4.7MF	20%	50V
C438	1-102-106-00	CERAMIC	100pF	10%	50V
C440	1-136-173-00	FILM	0.47MF	5%	50V
C441	1-137-364-11	FILM	0.001MF	5%	50V
C442	1-137-372-11	FILM	0.022MF	5%	50V
C443	1-126-964-11	ELECT	10MF	20%	50V
C445	1-102-114-00	CERAMIC	470pF	10%	50V
C446	1-137-364-11	FILM	0.001MF	5%	50V
C447	1-137-399-11	FILM	0.1MF	5%	50V
C448	1-137-399-11	FILM	0.1MF	5%	50V
C449	1-164-645-11	CERAMIC	1000pF	10%	500V
C450	1-136-169-00	FILM	0.22MF	5%	50V
C451	1-126-963-11	ELECT	4.7MF	20%	50V
C453	1-104-666-11	ELECT	220MF	20%	25V
C454	1-137-368-11	FILM	0.0047MF	5%	50V
C455	1-124-903-11	ELECT	1MF	20%	50V
C456	1-104-664-11	ELECT	47MF	20%	25V
C458	1-137-374-11	FILM	0.047MF	5%	50V
C459	1-137-399-11	FILM	0.1MF	5%	50V
C460	1-137-366-11	FILM	0.0022MF	5%	50V
C461	1-162-114-00	CERAMIC	0.0047MF		2KV
C462	1-137-399-11	FILM	0.1MF	5%	50V
C463	1-102-973-00	CERAMIC	100pF	5%	50V
C464	1-124-903-11	ELECT	1MF	20%	50V
C466	1-106-359-00	MYLAR	0.0047MF	10%	200V
C467	1-126-934-11	ELECT	220MF	20%	16V
C470	1-104-652-11	ELECT	470MF	20%	10V
C471	1-126-925-11	ELECT	470MF	20%	10V
C472	1-136-169-00	FILM	0.22MF	5%	50V
C473	1-102-114-00	CERAMIC	470pF	10%	50V
C501	1-106-228-00	MYLAR	0.22MF	10%	100V
C502	1-137-399-11	FILM	0.1MF	5%	50V
C503	1-107-894-11	ELECT	220MF	20%	35V
C505	1-102-112-00	CERAMIC	330pF	10%	50V
C506	1-137-399-11	FILM	0.1MF	5%	50V
C507	1-215-493-00	METAL	1M	1%	1/4W
C519	1-101-006-00	CERAMIC	0.047MF		50V
C520	1-128-528-11	ELECT	470MF	20%	25V
C521	1-128-528-11	ELECT	470MF	20%	25V
C522	1-101-006-00	CERAMIC	0.047MF		50V
C600	1-113-707-11	ELECT	220MF	20%	450V
C601	1-137-479-11	FILM	1MF	10%	400V
C602	1-137-399-11	FILM	0.1MF	5%	50V
C603	1-107-902-11	ELECT	1MF	20%	50V
C604	1-137-368-11	FILM	0.0047MF	5%	50V
C605	1-136-169-00	FILM	0.22MF	5%	50V
C606	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C607	1-126-965-11	ELECT	22MF	20%	50V
C608	1-126-967-11	ELECT	47MF	20%	50V

D

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C609	1-136-169-00	FILM	0.22MF	5%	50V
C610	1-128-339-11	ELECT	2200MF	20%	16V
C611	1-128-339-11	ELECT	2200MF	20%	16V
C612	1-137-399-11	FILM	0.1MF	5%	50V
C613	1-102-114-00	CERAMIC	470pF	10%	50V
C614	1-137-399-11	FILM	0.1MF	5%	50V
C615	1-164-646-11	CERAMIC	2200pF	10%	500V
C616 ⚠	1-113-926-91	ELECT	0.0047MF		250V
C617 ⚠	1-113-926-91	ELECT	0.0047MF		250V
C618	1-104-664-11	ELECT	47MF	20%	25V
C619	1-126-933-11	ELECT	100MF	20%	10V
C620	1-104-664-11	ELECT	47MF	20%	25V
C621	1-104-664-11	ELECT	47MF	20%	25V
C622	1-104-664-11	ELECT	47MF	20%	25V
C623	1-104-664-11	ELECT	47MF	20%	25V
C624	1-104-664-11	ELECT	47MF	20%	25V
C625	1-104-664-11	ELECT	47MF	20%	25V
C628	1-104-332-11	CERAMIC	470pF	10%	2KV
C630	1-124-925-11	ELECT	2.2MF	20%	50V
C631	1-102-129-00	CERAMIC	0.01MF	10%	50V
C633	1-104-664-11	ELECT	47MF	20%	25V
C634	1-165-136-11	CERAMIC	3300pF	10%	500V
C635	1-136-169-00	FILM	0.22MF	5%	50V
C636	1-164-644-11	CERAMIC	330pF	10%	500V
C637	1-107-955-11	ELECT	100MF	20%	200V
C638	1-107-952-11	ELECT	22MF	20%	200V
C639	1-137-399-11	FILM	0.1MF	5%	50V
C640	1-129-719-00	FILM	0.027MF	5%	630V
C642	1-104-800-11	ELECT	100MF	20%	100V
C643	1-107-928-11	ELECT	4.7MF	20%	100V
C644	1-164-644-11	CERAMIC	330pF	10%	500V
C645	1-126-963-11	ELECT	4.7MF	20%	50V
C646	1-136-169-00	FILM	0.22MF	5%	50V
C647	1-164-644-11	CERAMIC	330pF	10%	500V
C648	1-137-399-11	FILM	0.1MF	5%	50V
C649	1-107-890-11	ELECT	2200MF	20%	25V
C650	1-104-664-11	ELECT	47MF	20%	25V
C651	1-107-890-11	ELECT	2200MF	20%	25V
C652	1-104-664-11	ELECT	47MF	20%	25V
C653	1-137-399-11	FILM	0.1MF	5%	50V
C654	1-102-989-00	CERAMIC	68pF	5%	500V
C670	1-102-989-00	CERAMIC	68pF	5%	500V
C671	1-111-057-11	ELECT	120MF	20%	25V
C672	1-137-399-11	FILM	0.1MF	5%	50V
C673	1-130-489-00	FILM	0.033MF	5%	50V
C674	1-126-925-11	ELECT	470MF	20%	10V
C676	1-137-399-11	FILM	0.1MF	5%	50V
C677	1-104-665-11	ELECT	100MF	20%	25V
C678	1-128-526-11	ELECT	100MF	20%	25V
C679	1-130-489-00	FILM	0.033MF	5%	50V
C680	1-136-538-11	FILM	0.001MF	3%	2KV
C681	1-136-171-00	FILM	0.33MF	5%	50V
C682	1-137-372-11	FILM	0.022MF	5%	50V
C683	1-126-105-11	ELECT	1000MF	20%	25V
C684	1-137-399-11	FILM	0.1MF	5%	50V
C685 ⚠	1-113-513-11	FILM	1MF	20%	275V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C687 ⚠	1-113-900-51	CERAMIC	470pF	10%	250V
C688 ⚠	1-113-900-51	CERAMIC	470pF	10%	250V
C690 ⚠	1-113-513-11	FILM	1MF	20%	275V
C691	1-107-422-11	CERAMIC	150pF	10%	1KV
C692	1-107-422-11	CERAMIC	150pF	10%	1KV
C702	1-102-112-00	CERAMIC	330pF	10%	50V
C703	1-137-372-11	FILM	0.022MF	5%	50V
C704	1-126-964-11	ELECT	10MF	20%	50V
C705	1-137-399-11	FILM	0.1MF	5%	50V
C706	1-126-964-11	ELECT	10MF	20%	50V
C707	1-137-370-11	FILM	0.01MF	5%	50V
C708	1-137-370-11	FILM	0.01MF	5%	50V
C709	1-137-370-11	FILM	0.01MF	5%	50V
C710	1-136-193-11	FILM	0.47MF	10%	250V
C711	1-107-510-11	FILM	0.07MF	5%	400V
C712	1-115-353-11	FILM	0.22MF	5%	250V
C713	1-137-370-11	FILM	0.01MF	5%	50V
C714	1-107-847-11	FILM	0.36MF	5%	400V
C715	1-110-969-11	FILM	0.89MF	5%	400V
C716	1-107-849-11	FILM	1.5MF	5%	400V
C721	1-136-122-00	FILM	0.47MF	5%	400V
C723	1-136-203-11	FILM	0.0001MF	5%	630V
C724	1-137-370-11	FILM	0.01MF	5%	50V
C725	1-113-481-11	FILM	0.001MF	5%	630V
C726	1-107-652-11	ELECT	10MF	20%	200V
C727	1-124-903-11	ELECT	1MF	20%	50V
C728	1-137-368-11	FILM	0.0047MF	5%	50V
C729	1-136-169-00	FILM	0.22MF	5%	50V
C802	1-102-112-00	CERAMIC	330pF	10%	50V
C1401	1-107-909-11	ELECT	47MF	20%	50V
C1402	1-104-718-91	CERAMIC	33pF	5%	2KV
C1403	1-101-804-00	CERAMIC	10pF	5%	500V
C1404	1-101-804-00	CERAMIC	10pF	5%	500V
C1405	1-126-964-11	ELECT	10MF	20%	50V
C1406	1-162-318-11	CERAMIC	0.001MF	10%	500V
C1407	1-102-129-00	CERAMIC	0.01MF	10%	50V
C1408	1-137-399-11	FILM	0.1MF	5%	50V
C1409	1-102-106-00	CERAMIC	100pF	10%	50V
C1410	1-102-129-00	CERAMIC	0.01MF	10%	50V
C1411	1-104-664-11	ELECT	47MF	20%	25V
C1412	1-126-964-11	ELECT	10MF	20%	50V
C1413	1-136-169-00	FILM	0.22MF	5%	50V
C1501	1-137-375-11	FILM	0.068MF	5%	50V

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION	
CN401*	1-774-513-11	PIN, CONNECTOR (PC BOARD)	9P
CN402	1-764-101-11	PIN, CONNECTOR (PC BOARD)	2P
CN600 ⚠	1-691-960-11	CONNECTOR (AC POWER)	3P
CN601	1-695-915-11	TAB (CONTACT)	
CN606*	1-564-510-11	PLUG, CONNECTOR	7P
CN607	1-564-511-11	PLUG, CONNECTOR	8P
CN608*	1-564-508-11	PLUG, CONNECTOR	5P
CN685*	1-580-689-11	PIN, CONNECTOR (PC BOARD)	4P
CN701*	1-564-512-11	PLUG, CONNECTOR	9P
CN803*	1-508-879-00	BASE POST	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN804*	1-564-509-11	PLUG, CONNECTOR	6P
CN805*	1-564-513-11	PLUG, CONNECTOR	10P
CN810*	1-774-591-11	CONNECTOR, BOARD TO BOARD	20P
CN811*	1-774-591-11	CONNECTOR, BOARD TO BOARD	20P
CN812*	1-774-591-11	CONNECTOR, BOARD TO BOARD	20P

DIODE

REF.NO.	PART NO.	DESCRIPTION	REMARK
D401	8-719-109-89	ZENER DIODE RD5.6ESB2	
D402	8-719-911-19	DIODE 1SS119-25	
D403	8-719-911-19	DIODE 1SS119-25	
D404	8-719-911-19	DIODE 1SS119-25	
D405	8-719-911-19	DIODE 1SS119-25	
D406	8-719-984-73	DIODE SB560	
D407	8-719-110-46	ZENER DIODE RD16ESB3	
D408	8-719-110-31	ZENER DIODE RD12ESB2	
D410	8-719-049-12	DIODE 5TUZ52	
D411	8-719-048-73	DIODE ERC90M-03	
D412	8-719-110-17	ZENER DIODE RD10ESB2	
D413	8-719-911-19	DIODE 1SS119-25	
D414	8-719-018-82	DIODE RGP02-20EL-6394	
D415	8-719-911-19	DIODE 1SS119-25	
D416	8-719-110-17	ZENER DIODE RD10ESB2	
D417	8-719-110-13	ZENER DIODE RD9.1ESB2	
D418	8-719-109-85	ZENER DIODE RD5.1ESB2	
D419	8-719-911-19	DIODE 1SS119-25	
D420	8-719-911-19	DIODE 1SS119-25	
D421	8-719-911-19	DIODE 1SS119-25	
D422	8-719-941-74	DIODE ERB91-02	
D423	8-719-911-19	DIODE 1SS119-25	
D424	8-719-911-19	DIODE 1SS119-25	
D425 ⚠	8-719-923-31	ZENER DIODE MTZJ-T-77-4.7C	
D426	8-719-911-19	DIODE 1SS119-25	
D427	8-719-911-19	DIODE 1SS119-25	
D428	8-719-110-46	ZENER DIODE RD16ESB3	
D429 ⚠	8-719-921-20	DIODE 1SS119-25TD	
D430	8-719-941-74	DIODE ERB91-02	
D431	8-719-048-73	DIODE ERC90M-03	
D432	8-719-110-46	ZENER DIODE RD16ESB3	
D433	8-719-911-19	DIODE 1SS119-25	
D434	8-719-911-19	DIODE 1SS119-25	
D438	8-719-911-19	DIODE 1SS119-25	
D439 ⚠	8-719-979-61	DIODE EGP10D PKG23	
D440	8-719-200-02	DIODE 10E-2	
D441	8-719-911-19	DIODE 1SS119-25	
D442 ⚠	8-719-111-82	ZENER DIODE RD5.1ES-T1B2	
D443 ⚠	8-719-111-82	ZENER DIODE RD5.1ES-T1B2	
D444 ⚠	8-719-111-73	ZENER DIODE RD4.7ES-T1B2	
D445 ⚠	8-759-300-59	DIODE HZT33-02TA	
D446	8-719-109-81	ZENER DIODE RD4.7ESB2	
D448	8-719-911-19	DIODE 1SS119-25	
D451	8-719-911-19	DIODE 1SS119-25	
D454	8-719-110-17	ZENER DIODE RD10ESB2	
D455	8-719-911-19	DIODE 1SS119-25	
D456	8-719-911-19	DIODE 1SS119-25	
D457	8-719-911-19	DIODE 1SS119-25	
D501	8-719-908-03	DIODE GP08D	
D502	8-719-911-19	DIODE 1SS119-25	
D503	8-719-110-17	ZENER DIODE RD10ESB2	
D504	8-719-908-03	DIODE GP08D	
D505	8-719-979-85	DIODE EGP20G	
D600 ⚠	8-719-510-63	DIODE D4SB60L	
D601	8-719-029-04	DIODE D5L60	
D602	8-719-911-19	DIODE 1SS119-25	
D603	8-719-022-97	DIODE D2S4MF	
D604	8-719-022-97	DIODE D2S4MF	
D605	8-719-109-93	ZENER DIODE RD6.2ESB2	
D606	8-719-110-49	ZENER DIODE RD18ESB2	
D631	8-719-110-49	ZENER DIODE RD18ESB2	
D632	8-719-911-19	DIODE 1SS119-25	
D634	8-719-052-86	DIODE D2L40-TA	
D635	8-719-911-19	DIODE 1SS119-25	
D636	8-719-052-86	DIODE D2L40-TA	
D637	8-719-911-19	DIODE 1SS119-25	
D638	8-719-110-63	ZENER DIODE RD24ESB3	
D639	8-719-052-86	DIODE D2L40-TA	
D640	8-719-052-86	DIODE D2L40-TA	
D642	8-719-510-64	DIODE S2LA20F	
D648	8-719-911-19	DIODE 1SS119-25	
D650	8-719-911-19	DIODE 1SS119-25	
D651	8-719-052-91	DIODE D4SBS4-F	
D653	8-719-911-19	DIODE 1SS119-25	
D654	8-719-911-19	DIODE 1SS119-25	
D655	8-719-911-19	DIODE 1SS119-25	
D670	8-719-110-49	ZENER DIODE RD18ESB2	
D671	8-719-510-64	DIODE S2LA20F	
D672	8-719-110-49	ZENER DIODE RD18ESB2	
D673	8-719-510-02	DIODE D1NS4	
D674	8-719-510-64	DIODE S2LA20F	
D675	8-719-022-97	DIODE D2S4MF	
D679	8-719-911-19	DIODE 1SS119-25	
D680	8-719-109-66	ZENER DIODE RD3.3ESB2	
D681	8-719-911-19	DIODE 1SS119-25	
D682	8-719-109-66	ZENER DIODE RD3.3ESB2	
D683	8-719-911-19	DIODE 1SS119-25	
D684	8-719-911-19	DIODE 1SS119-25	
D685	8-719-911-19	DIODE 1SS119-25	
D686	8-719-911-19	DIODE 1SS119-25	
D689	8-719-911-19	DIODE 1SS119-25	
D691	8-719-109-89	ZENER DIODE RD5.6ESB2	
D701	8-719-109-81	ZENER DIODE RD4.7ESB2	
D702	8-719-109-81	ZENER DIODE RD4.7ESB2	
D703	8-719-109-81	ZENER DIODE RD4.7ESB2	
D704	8-719-109-81	ZENER DIODE RD4.7ESB2	
D706	8-719-948-45	DIODE ERA22-08	
D707	8-719-948-45	DIODE ERA22-08	
D708	8-719-110-31	ZENER DIODE RD12ESB2	
D709	8-719-110-31	ZENER DIODE RD12ESB2	
D1402	8-719-911-19	DIODE 1SS119-25	
D1403	8-719-109-89	ZENER DIODE RD5.6ESB2	
D1404	8-719-911-19	DIODE 1SS119-25	
D1405	8-719-911-19	DIODE 1SS119-25	
D1406	8-719-911-19	DIODE 1SS119-25	

D

Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1407	8-719-109-89	ZENER DIODE RD5.6ESB2	
		DISCHARGE GAP	
DS401	1-519-421-11	GAP, DISCHARGE	
		FUSE	
F685 ⚠	1-576-233-11	FUSE (H.B.C.)	
	1-533-223-11	HOLDER, FUSE ; F685	
		FERRITE BEAD	
FB401	1-410-397-21	FERRITE BEAD INDUCTOR	1.1UH
FB403	1-410-397-21	FERRITE BEAD INDUCTOR	1.1UH
FB405	1-410-397-21	FERRITE BEAD INDUCTOR	1.1UH
FB601	1-410-396-41	FERRITE BEAD INDUCTOR	0.45UH
FB602	1-410-396-41	FERRITE BEAD INDUCTOR	0.45UH
FB603	1-410-396-41	FERRITE BEAD INDUCTOR	0.45UH
FB631	1-410-396-41	FERRITE BEAD INDUCTOR	0.45UH
FB632	1-410-396-41	FERRITE BEAD INDUCTOR	0.45UH
FB633	1-410-396-41	FERRITE BEAD INDUCTOR	0.45UH
		IC	
IC401 ⚠	8-759-982-76	IC BA10339	
IC402	8-759-803-42	IC LA6500-FA	
IC403 ⚠	8-759-059-99	IC BA10324A	
IC504	8-759-980-58	IC TDA8172	
IC601	8-759-904-94	IC TL494CN	
IC602	8-759-140-85	IC UPC1093J	
IC603	8-749-011-42	IC SI-3050F	
IC606	8-759-231-53	IC TA7805S	
IC607	8-759-179-05	IC UPC7905H	
IC608	8-759-325-00	IC LM2940CT	
IC609	8-759-231-53	IC TA7805S	
IC630	8-749-012-05	IC DM-57	
IC701	8-759-822-38	IC LA6510	
IC702	8-749-011-63	IC IRSY5305	
IC1401	8-759-634-51	IC M5218AP	
		COIL	
L401	1-412-529-11	INDUCTOR	22UH
L402	1-411-592-21	COIL, CHOKE	500UH
L403	1-406-675-11	COIL, CHOKE	4.7mH
L405	1-411-666-11	COIL, HORIZONTAL LINEARITY	
L406	1-411-709-11	COIL, HORIZONTAL LINEARITY	
L407	1-412-545-11	INDUCTOR	470UH
L408	1-412-545-11	INDUCTOR	470UH
L409	1-411-594-11	COIL, CHOKE	5mH
L410	1-408-409-00	INDUCTOR	10UH
L630	1-403-588-11	CIL, CHOKE	22UH
L631	1-408-409-00	INDUCTOR	10UH
L632	1-403-588-11	CIL, CHOKE	22UH
L633	1-403-588-11	CIL, CHOKE	22UH
L701	1-412-521-21	INDUCTOR	4.7UH
L702	1-414-493-41	INDUCTOR	4.7mH
L703	1-414-493-41	INDUCTOR	4.7mH
		PHOTO COUPLER	
PH670	8-749-010-64	PHOTO COUPLER PC123F2	
PH675	8-719-156-73	PHOTO COUPLER PS2501-1-L	
		IC LINK	
PS401 ⚠	1-533-592-31	RINK, IC	
PS402 ⚠	1-533-590-31	RINK, IC	
PS670 ⚠	1-532-605-91	LINK, IC	0.4A/150V
PS671 ⚠	1-532-984-91	LINK, IC	2A/90V
PS672 ⚠	1-532-984-91	LINK, IC	2A/90V
PS673 ⚠	1-532-984-91	LINK, IC	2A/90V
		TRANSISTOR	
Q401	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q403	8-729-820-73	TRANSISTOR 2SC3746	
Q404	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q405	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q406	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q407	8-729-033-99	TRANSISTOR 2SC5301-CC	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3 ; Q407	
Q408	8-729-015-28	TRANSISTOR IRFI9630GS	
Q409	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q410	8-729-029-86	TRANSISTOR DTC124ESA	
Q411	8-729-140-96	TRANSISTOR 2SD774-34	
Q413	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q414	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q415	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q416	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q417	8-729-015-28	TRANSISTOR IRFI9630GS	
Q418	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q419	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q420	8-729-032-88	TRANSISTOR IRFPG50LF21	
Q423	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q424	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q425	8-729-029-86	TRANSISTOR DTC124ESA	
Q426	8-729-029-40	TRANSISTOR DTA124ESA	
Q600	8-729-034-74	TRANSISTOR FS16SM-10-AB	
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q602	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q604	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q606	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q608	8-729-803-76	TRANSISTOR 2SA1371-E	
Q609	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q610	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q640	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q641	8-729-230-45	TRANSISTOR 2SC2458-YGR	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q642	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q643	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q644	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q645	8-729-016-15	TRANSISTOR 2SC4833MNP	
Q647	8-729-016-15	TRANSISTOR 2SC4833MNP	
Q648	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q649	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q671	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q672	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q674	8-729-032-36	TRANSISTOR 2SC4052MNPR	
Q675	8-729-032-36	TRANSISTOR 2SC4052MNPR	
Q686	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q702	8-729-032-61	TRANSISTOR 2SC5022-02	
Q703	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q704	8-729-808-36	TRANSISTOR 2SK669	
Q1401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1402	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
Q1403	8-729-140-96	TRANSISTOR 2SD774-34	
Q1404	8-729-029-40	TRANSISTOR DTA124ESA	

RESISTOR

REF.NO.	PART NO.	DESCRIPTION				REMARK
R401	1-247-807-31	CARBON	100	5%	1/4W	
R402	1-249-393-11	CARBON	10	5%	1/4W	F
R403	1-249-421-11	CARBON	2.2K	5%	1/4W	
R404	1-249-417-11	CARBON	1K	5%	1/4W	
R405	1-249-417-11	CARBON	1K	5%	1/4W	
R406	1-249-413-11	CARBON	470	5%	1/4W	
R407	1-249-421-11	CARBON	2.2K	5%	1/4W	
R408	1-249-393-11	CARBON	10	5%	1/4W	F
R409	1-249-397-11	CARBON	22	5%	1/4W	F
R410	1-260-296-11	CARBON	2.2	5%	1/2W	
R411	1-215-861-00	METAL OXIDE	47	5%	1W	F
R412	1-249-421-11	CARBON	2.2K	5%	1/4W	
R413	1-216-396-11	METAL OXIDE	3.9	5%	3W	F
R414	1-215-437-00	METAL	4.7K	1%	1/4W	
R415	1-216-447-00	METAL OXIDE	27	5%	2W	F
R416	1-247-863-91	CARBON	22K	5%	1/4W	
R417	1-215-437-00	METAL	4.7K	1%	1/4W	
R418	1-249-429-11	CARBON	10K	5%	1/4W	
R419	1-249-421-11	CARBON	2.2K	5%	1/4W	
R420	1-247-807-31	CARBON	100	5%	1/4W	
R421	1-216-396-11	METAL OXIDE	3.9	5%	3W	F
R422 ⚠	1-215-425-91	METAL	1.5K	1%	1/4W	
R423 ⚠	1-215-469-91	METAL	100K	1%	1/4W	
R424	1-249-425-11	CARBON	4.7K	5%	1/4W	
R425	1-202-719-00	SOLID	1M	20%	1/2W	
R426	1-202-826-00	SOLID	4.7K	20%	1/2W	
R427	1-215-455-00	METAL	27K	1%	1/4W	
R428	1-247-887-00	CARBON	220K	5%	1/4W	
R429	1-215-861-00	METAL OXIDE	47	5%	1W	F
R430	1-215-425-00	METAL	1.5K	1%	1/4W	
R431	1-249-417-11	CARBON	1K	5%	1/4W	F
R432	1-215-891-11	METAL OXIDE	680	5%	2W	F
R433	1-216-396-11	METAL OXIDE	3.9	5%	3W	F
R434	1-249-417-11	CARBON	1K	5%	1/4W	
R435 ⚠	1-247-871-91	CARBON	47K	5%	1/4W	
R436	1-215-445-00	METAL	10K	1%	1/4W	
R437	1-249-413-11	CARBON	470	5%	1/4W	
R438	1-214-840-00	METAL	100	1%	1/2W	
R439	1-249-437-11	CARBON	47K	5%	1/4W	
R440	1-249-417-11	CARBON	1K	5%	1/4W	
R441	1-214-840-00	METAL	100	1%	1/2W	
R442	1-249-437-11	CARBON	47K	5%	1/4W	
R443	1-249-421-11	CARBON	2.2K	5%	1/4W	
R444	1-249-429-11	CARBON	10K	5%	1/4W	
R445	1-214-840-00	METAL	100	1%	1/2W	
R446	1-215-449-00	METAL	15K	1%	1/4W	
R447	1-215-459-00	METAL	39K	1%	1/4W	
R448 ⚠	1-215-421-91	METAL	1K	1%	1/4W	
R449	1-249-425-11	CARBON	4.7K	5%	1/4W	
R450	1-216-393-00	METAL OXIDE	2.2	5%	3W	F
R451	1-249-421-11	CARBON	2.2K	5%	1/4W	
R452	1-216-393-00	METAL OXIDE	2.2	5%	3W	F
R453	1-260-085-11	CARBON	68	5%	1/2W	
R454	1-215-451-00	METAL	18K	1%	1/4W	
R455	1-247-887-00	CARBON	220K	5%	1/4W	
R456	1-249-421-11	CARBON	2.2K	5%	1/4W	
R457	1-249-429-11	CARBON	10K	5%	1/4W	
R458	1-215-863-11	METAL OXIDE	100	5%	1W	F
R460 ⚠	1-247-849-91	CARBON	5.6K	5%	1/4W	
R461 ⚠	1-247-849-91	CARBON	5.6K	5%	1/4W	
R462 ⚠	1-215-425-91	METAL	1.5K	1%	1/4W	
R463	1-249-401-11	CARBON	47	5%	1/4W	F
R464	1-249-393-11	CARBON	10	5%	1/4W	F
R465	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R466	1-249-417-11	CARBON	1K	5%	1/4W	
R467	1-249-417-11	CARBON	1K	5%	1/4W	
R468	1-247-863-91	CARBON	22K	5%	1/4W	
R469	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R470 ⚠	1-215-453-91	METAL	22K	1%	1/4W	
R471	1-249-393-11	CARBON	10	5%	1/4W	F
R472 ⚠	1-215-455-91	METAL	27K	1%	1/4W	
R473	1-249-397-11	CARBON	22	5%	1/4W	F
R476	1-249-441-11	CARBON	100K	5%	1/4W	
R477	1-215-913-11	METAL OXIDE	220	5%	3W	F
R478	1-215-913-11	METAL OXIDE	220	5%	3W	F
R479	1-215-913-11	METAL OXIDE	220	5%	3W	F
R480	1-249-429-11	CARBON	10K	5%	1/4W	
R481	1-247-807-31	CARBON	100	5%	1/4W	
R482	1-249-417-11	CARBON	1K	5%	1/4W	F
R483	1-249-429-11	CARBON	10K	5%	1/4W	
R484	1-215-421-00	METAL	1K	1%	1/4W	
R485	1-247-891-00	CARBON	330K	5%	1/4W	
R486	1-247-895-91	CARBON	470K	5%	1/4W	
R487 ⚠	1-215-455-91	METAL	27K	1%	1/4W	
R488	1-215-437-00	METAL	4.7K	1%	1/4W	
R489	1-215-457-00	METAL	33K	1%	1/4W	
R490 ⚠	1-249-389-91	CARBON	4.7	5%	1/4W	F
R491 ⚠	1-247-700-71	CARBON	100	5%	1/4W	F
R492	1-215-461-00	METAL	47K	1%	1/4W	
R493 ⚠	1-215-474-91	METAL	160K	1%	1/4W	
R494	1-215-459-00	METAL	39K	1%	1/4W	

D

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R495	1-215-445-00	METAL	10K	1%	1/4W	
R496	1-202-826-00	SOLID	4.7K	20%	1/2W	
R497 ⚠	1-215-459-91	METAL	39K	1%	1/4W	
R498	1-202-826-00	SOLID	4.7K	20%	1/2W	
R499	1-249-435-11	CARBON	33K	5%	1/4W	
R501 ⚠	1-215-443-91	METAL	8.2K	1%	1/4W	
R502	1-249-421-11	CARBON	2.2K	5%	1/4W	
R503 ⚠	1-215-441-91	METAL	6.8K	1%	1/4W	
R504	1-215-439-00	METAL	5.6K	1%	1/4W	
R505	1-249-421-11	CARBON	2.2K	5%	1/4W	
R506	1-215-453-00	METAL	22K	1%	1/4W	
R508 ⚠	1-215-875-71	METAL OXIDE	10K	5%	1W	F
R509	1-215-475-00	METAL	180K	1%	1/4W	
R510	1-215-467-00	METAL	82K	1%	1/4W	
R511	1-214-798-21	METAL	1.8	1%	1/2W	
R512	1-215-866-11	METAL OXIDE	330	5%	1W	F
R513	1-249-383-11	CARBON	1.5	5%	1/4W	F
R514	1-215-409-00	METAL	330	1%	1/4W	
R515	1-215-423-00	METAL	1.2K	1%	1/4W	
R516	1-260-099-11	CARBON	1K	5%	1/2W	F
R517	1-249-415-11	CARBON	680	5%	1/4W	
R521	1-216-393-00	METAL OXIDE	2.2	5%	3W	F
R522	1-216-393-00	METAL OXIDE	2.2	5%	3W	F
R524	1-215-433-00	METAL	3.3K	1%	1/4W	
R525	1-215-459-00	METAL	39K	1%	1/4W	
R526	1-214-798-21	METAL	1.8	1%	1/2W	
R530	1-249-421-11	CARBON	2.2K	5%	1/4W	
R531	1-249-421-11	CARBON	2.2K	5%	1/4W	
R532	1-215-443-00	METAL	8.2K	1%	1/4W	
R533	1-215-453-00	METAL	22K	1%	1/4W	
R534	1-215-421-00	METAL	1K	1%	1/4W	
R535	1-215-429-00	METAL	2.2K	1%	1/4W	
R536	1-215-453-00	METAL	22K	1%	1/4W	
R537	1-215-421-00	METAL	1K	1%	1/4W	
R600	1-249-393-11	CARBON	10	5%	1/4W	
R601	1-249-425-11	CARBON	4.7K	5%	1/4W	
R602	1-249-417-11	CARBON	1K	5%	1/4W	
R603	1-215-428-00	METAL	2K	1%	1/4W	
R604	1-247-887-00	CARBON	220K	5%	1/4W	
R605	1-247-807-31	CARBON	100	5%	1/4W	
R606	1-215-445-00	METAL	10K	1%	1/4W	
R607	1-247-887-00	CARBON	220K	5%	1/4W	
R608	1-247-883-00	CARBON	150K	5%	1/4W	
R609	1-215-485-00	METAL	470K	1%	1/4W	
R610	1-215-483-00	METAL	390K	1%	1/4W	
R611	1-215-457-00	METAL	33K	1%	1/4W	
R612	1-215-483-00	METAL	390K	1%	1/4W	
R613	1-215-483-00	METAL	390K	1%	1/4W	
R614	1-215-445-00	METAL	10K	1%	1/4W	
R615	1-215-437-00	METAL	4.7K	1%	1/4W	
R617	1-260-288-11	CARBON	0.47	5%	1/2W	
R619	1-212-942-00	FUSIBLE	2.2	5%	1/2W	F
R620	1-249-425-11	CARBON	4.7K	5%	1/4W	
R621	1-249-437-11	CARBON	47K	5%	1/4W	
R622	1-247-863-91	CARBON	22K	5%	1/4W	
R623	1-249-413-11	CARBON	470	5%	1/4W	
R624	1-249-429-11	CARBON	10K	5%	1/4W	
R625	1-249-425-11	CARBON	4.7K	5%	1/4W	
R626	1-249-437-11	CARBON	47K	5%	1/4W	
R627	1-247-895-91	CARBON	470K	5%	1/4W	
R628	1-216-397-11	METAL OXIDE	4.7	5%	3W	F
R629	1-249-421-11	CARBON	2.2K	5%	1/4W	
R630	1-215-485-00	METAL	470K	1%	1/4W	
R631	1-215-485-00	METAL	470K	1%	1/4W	
R632	1-249-429-11	CARBON	10K	5%	1/4W	
R633	1-247-807-31	CARBON	100	5%	1/4W	
R634	1-249-429-11	CARBON	10K	5%	1/4W	
R635	1-249-425-11	CARBON	4.7K	5%	1/4W	
R636	1-249-429-11	CARBON	10K	5%	1/4W	
R637	1-249-429-11	CARBON	10K	5%	1/4W	
R638	1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R639	1-247-895-91	CARBON	470K	5%	1/4W	
R640	1-249-417-11	CARBON	1K	5%	1/4W	
R641	1-249-429-11	CARBON	10K	5%	1/4W	
R642	1-249-425-11	CARBON	4.7K	5%	1/4W	
R643	1-218-642-11	METAL OXIDE	100K	5%	1W	F
R644	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R645	1-249-429-11	CARBON	10K	5%	1/4W	F
R646	1-202-842-11	SOLID	220K	20%	1/2W	
R647	1-249-429-11	CARBON	10K	5%	1/4W	
R648	1-249-429-11	CARBON	10K	5%	1/4W	
R649	1-249-429-11	CARBON	10K	5%	1/4W	
R650	1-249-389-11	CARBON	4.7	5%	1/4W	
R651	1-249-413-11	CARBON	470	5%	1/4W	F
R652	1-215-481-00	METAL	330K	1%	1/4W	
R653	1-247-791-91	CARBON	22	5%	1/4W	
R654	1-215-461-00	METAL	47K	1%	1/4W	
R655	1-216-345-11	METAL OXIDE	0.47	5%	1W	F
R656	1-260-127-11	CARBON	220K	5%	1/2W	
R657	1-260-292-11	CARBON	1	5%	1/2W	
R658	1-260-127-11	CARBON	220K	5%	1/2W	
R659	1-249-389-11	CARBON	4.7	5%	1/4W	
R660	1-260-288-11	CARBON	0.47	5%	1/2W	
R663	1-215-469-00	METAL	100K	1%	1/4W	
R664	1-247-791-91	CARBON	22	5%	1/4W	
R665	1-249-429-11	CARBON	10K	5%	1/4W	
R668	1-249-393-11	CARBON	10	5%	1/4W	F
R669	1-249-391-11	CARBON	6.8	5%	1/4W	
R670	1-249-393-11	CARBON	10	5%	1/4W	F
R671	1-247-863-91	CARBON	22K	5%	1/4W	
R672	1-249-411-11	CARBON	330	5%	1/4W	
R673	1-249-429-11	CARBON	10K	5%	1/4W	
R674	1-247-863-91	CARBON	22K	5%	1/4W	
R675	1-215-451-00	METAL	18K	1%	1/4W	
R676	1-215-403-00	METAL	180	1%	1/4W	
R677	1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R678	1-215-419-00	METAL	820	1%	1/4W	
R679	1-215-433-00	METAL	3.3K	1%	1/4W	
R680	1-247-815-91	CARBON	220	5%	1/4W	
R681	1-247-891-00	CARBON	330K	5%	1/4W	
R682	1-249-425-11	CARBON	4.7K	5%	1/4W	
R683	1-249-429-11	CARBON	10K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by 🅇 in this manual have been carefully factory-selected for eachset in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R685	1-247-891-00	CARBON	330K	5%	1/4W	
R686	1-247-891-00	CARBON	330K	5%	1/4W	
R687	1-249-391-11	CARBON	6.8	5%	1/4W	
R688	1-247-891-00	CARBON	330K	5%	1/4W	
R689	1-260-083-11	CARBON	47	5%	1/2W	
R692	1-218-191-11	METAL OXIDE	0.1	5%	1W	F
R693	1-218-191-11	METAL OXIDE	0.1	5%	1W	F
R694	1-249-421-11	CARBON	2.2K	5%	1/4W	
R695	1-249-441-11	CARBON	100K	5%	1/4W	
R696 ⚠	1-202-914-91	SOLID	390K	20%	1/2W	
R701	1-249-381-11	CARBON	1	5%	1/4W	F
R702	1-215-863-11	METAL OXIDE	100	5%	1W	F
R703	1-249-385-11	CARBON	2.2	5%	1/4W	
R704	1-249-425-11	CARBON	4.7K	5%	1/4W	
R705	1-249-431-11	CARBON	15K	5%	1/4W	
R707	1-249-425-11	CARBON	4.7K	5%	1/4W	
R708	1-249-417-11	CARBON	1K	5%	1/4W	
R709	1-216-341-11	METAL OXIDE	0.22	5%	1W	F
R710	1-215-445-00	METAL	10K	1%	1/4W	
R711	1-215-465-00	METAL	68K	1%	1/4W	
R712	1-215-463-00	METAL	56K	1%	1/4W	
R713	1-215-861-00	METAL OXIDE	47	5%	1W	F
R714	1-215-445-00	METAL	10K	1%	1/4W	
R715	1-215-445-00	METAL	10K	1%	1/4W	
R716	1-215-457-00	METAL	33K	1%	1/4W	
R717	1-249-417-11	CARBON	1K	5%	1/4W	
R718	1-249-421-11	CARBON	2.2K	5%	1/4W	
R719	1-249-385-11	CARBON	2.2	5%	1/4W	
R720	1-249-381-11	CARBON	1	5%	1/4W	F
R721	1-249-417-11	CARBON	1K	5%	1/4W	
R722	1-249-417-11	CARBON	1K	5%	1/4W	
R723	1-249-417-11	CARBON	1K	5%	1/4W	
R724	1-215-864-00	METAL OXIDE	150	5%	1W	F
R725	1-249-417-11	CARBON	1K	5%	1/4W	
R727	1-215-443-00	METAL	8.2K	1%	1/4W	
R728	1-215-485-00	METAL	470K	1%	1/4W	
R729	1-249-437-11	CARBON	47K	5%	1/4W	
R731	1-249-417-11	CARBON	1K	5%	1/4W	
R734	1-215-909-11	METAL OXIDE	47	5%	3W	F
R735	1-249-437-11	CARBON	47K	5%	1/4W	
R736	1-249-437-11	CARBON	47K	5%	1/4W	
R737	1-249-437-11	CARBON	47K	5%	1/4W	
R738	1-249-437-11	CARBON	47K	5%	1/4W	
R741	1-215-413-00	METAL	470	1%	1/4W	
R742	1-249-437-11	CARBON	47K	5%	1/4W	
R802	1-249-423-11	CARBON	3.3K	5%	1/4W	
R804	1-249-413-11	CARBON	470	5%	1/4W	
R809	1-249-415-11	CARBON	680	5%	1/4W	
R1401	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1402	1-249-429-11	CARBON	10K	5%	1/4W	
R1403	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1404	1-249-417-11	CARBON	1K	5%	1/4W	
R1405	1-249-429-11	CARBON	10K	5%	1/4W	
R1406	1-249-429-11	CARBON	10K	5%	1/4W	
R1407	1-249-417-11	CARBON	1K	5%	1/4W	
R1409	1-247-895-91	CARBON	470K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1410	1-249-429-11	CARBON	10K	5%	1/4W	
R1411	1-247-807-31	CARBON	100	5%	1/4W	
R1412	1-247-807-31	CARBON	100	5%	1/4W	
R1417	1-215-409-00	METAL	330	1%	1/4W	
R1600	1-249-401-11	CARBON	47	5%	1/4W	
R1601	1-249-437-11	CARBON	47K	5%	1/4W	
R1602	1-249-429-11	CARBON	10K	5%	1/4W	
R1603	1-249-429-11	CARBON	10K	5%	1/4W	
R1604	1-247-863-91	CARBON	22K	5%	1/4W	
R1605	1-260-085-11	CARBON	68	5%	1/2W	
R1609	1-249-429-11	CARBON	10K	5%	1/4W	
R1610	1-249-429-11	CARBON	10K	5%	1/4W	
R1611 ⚠	1-205-998-11	WIREWOUND	1	5%	10W	
R1701	1-215-485-00	METAL	470K	1%	1/4W	

VARIABLE RESISTOR

🅇 RV401 ⚠	1-241-766-21	RES, ADJ, CERMET 47K (HV ADJ)	
RV601	1-241-761-11	RES, ADJ, CERMET	1K (+B)

RELAY

RY401	1-755-137-11	RELAY
RY685 ⚠	1-515-849-11	RELAY
RY686 ⚠	1-755-031-11	RELAY

SPARK GAP

SG701	1-519-422-11	GAP, SPARK
SG702	1-517-538-11	GAP, SPARK

SWITCH

SW600	1-571-433-21	SWITCH, PUSH (AC POWER)

TRANSFORMER

T401	1-429-303-11	TRANSFORMER, FERRITE (HDT)
T403	1-426-998-11	TRANSFORMER, FERRITE (HST)
T404 ⚠	X-4033-530-1	TRANSFORMER, ASSY, FLYBACK (NX-4140//J1A4)
T410	1-429-301-11	TRANSFORMER, FERRITE (HCT)
T601	1-429-326-11	TRANSFORMER, CONVERTER (PIT)
T602	1-411-593-31	COIL, CHOKE 85UF
T603	1-429-212-11	TRANSFORMER, CONVERTER (PIT)
T604	1-427-864-11	TRANSFORMER, CONVERTER (PRT)
	*4-051-892-11	CASE, SHIELD (D1) ; T604
T605	1-427-864-11	TRANSFORMER, CONVERTER (PRT)
T686 ⚠	1-429-180-11	TRANSFORMER, LINE FILTER
T701	1-424-555-11	TRANSFORMER, FERRITE (DFT)
T1402	1-423-405-12	TRANSFORMER, FERRITE (FRT)

THERMISTOR

TH601 ⚠	1-809-260-11	THERMISTOR, POWER
TH701	1-807-796-11	THERMISTOR

D H1 N

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

THERMISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
THP685⚠	1-809-827-11	THERMISTOR, POSITIVE	

VARISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
VDR685⚠	1-807-180-31	VARISTOR ZNR-14DK471U	
VDR686⚠	1-810-622-11	VARISTOR	
VDR687	1-810-974-21	VARISTOR	

*8-933-195-00 H1 BOARD, COMPLETE

*4-049-089-01 HOLDER, LED

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN1804	1-564-511-11	PLUG, CONNECTOR	8P

DIODE

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1806	8-719-045-19	DIODE SPB-26MVWF	
D1807	8-719-311-90	DIODE SEL1922D-C	

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1805	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1806	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1807	8-729-119-78	TRANSISTOR 2SC2785-HFE	

RESISTOR

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1805	1-215-413-00	METAL	470	1%	1/4W
R1807	1-215-409-00	METAL	330	1%	1/4W
R1808	1-215-413-00	METAL	470	1%	1/4W
R1810	1-215-413-00	METAL	470	1%	1/4W
R1812	1-215-417-00	METAL	680	1%	1/4W
R1814	1-215-421-00	METAL	1K	1%	1/4W
R1816	1-215-425-00	METAL	1.5K	1%	1/4W
R1817	1-249-413-11	CARBON	470	5%	1/4W
R1818	1-215-425-00	METAL	1.5K	1%	1/4W
R1819	1-249-411-11	CARBON	330	5%	1/4W
R1820	1-249-413-11	CARBON	470	5%	1/4W
R1821	1-215-433-00	METAL	3.3K	1%	1/4W
R1822	1-215-469-00	METAL	100K	1%	1/4W

SWITCH

REF.NO.	PART NO.	DESCRIPTION	REMARK
S1802	1-692-431-21	SWITCH, TACTILE (CONT+)	
S1803	1-692-431-21	SWITCH, TACTILE (CONT-)	
S1804	1-692-431-21	SWITCH, TACTILE (BRT+)	
S1805	1-692-431-21	SWITCH, TACTILE (BRT-)	
S1806	1-692-431-21	SWITCH, TACTILE (CENT)	
S1807	1-692-431-21	SWITCH, TACTILE (SIZE)	
S1808	1-692-431-21	SWITCH, TACTILE (GEOM)	
S1809	1-692-431-21	SWITCH, TACTILE (CONV)	
S1810	1-692-431-21	SWITCH, TACTILE (OPTION)	
S1811	1-692-431-21	SWITCH, TACTILE (RESET)	

*8-933-155-00 N BOARD, COMPLETE

CAPACITOR

REF.NO.	PART NO.	DESCRIPTION			REMARK
C901	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C902	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C903	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C904	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C905	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C906	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C907	1-126-301-11	ELECT	1MF	20%	50V
C908	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C909	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C910	1-124-635-00	ELECT	220MF	20%	6.3V
C911	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C912	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C913	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C915	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C916	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C917	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C922	1-136-621-11	FILM	0.1MF	5%	50V
C923	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C925	1-126-022-11	ELECT	47MF	20%	25V
C930	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C932	1-137-372-11	FILM	0.022MF	5%	50V
C933	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C934	1-137-375-11	FILM	0.068MF	5%	50V
C935	1-124-635-00	ELECT	220MF	20%	6.3V
C936	1-126-157-11	ELECT	10MF	20%	16V
C937	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C953	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C958	1-126-022-11	ELECT	47MF	20%	25V
C959	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C963	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C964	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C965	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C966	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C967	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C968	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C969	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C970	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C971	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C972	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C973	1-126-789-11	ELECT	33MF	20%	25V
C974	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C976	1-163-251-11	CERAMIC CHIP	100pF	5%	50V

REF.NO.	PART NO.	DESCRIPTION		REMARK	
C977	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C978	1-124-257-00	ELECT	2.2MF	20%	50V
C979	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C980	1-163-113-00	CERAMIC CHIP	68pF	5%	50V
C981	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C982	1-137-370-11	FILM	0.01MF	5%	50V
C984	1-124-455-00	ELECT	100MF	20%	16V
C985	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C986	1-136-621-11	FILM	0.1MF	5%	50V
C987	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C988	1-126-022-11	ELECT	47MF	20%	25V
C990	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C991	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C992	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C993	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C994	1-124-635-00	ELECT	220MF	20%	6.3V
C995	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C996	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C997	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C998	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C999	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C1000	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C1001	1-163-038-91	CERAMIC CHIP	0.1MF		25V
C1019	1-163-038-91	CERAMIC CHIP	0.1MF		25V

CONNECTOR

CN910*	1-774-590-11	CONNECTOR, BOARD TO BOARD	20P
CN911*	1-774-590-11	CONNECTOR, BOARD TO BOARD	20P
CN912*	1-774-590-11	CONNECTOR, BOARD TO BOARD	20P

DIODE

D901	8-719-404-46	DIODE MA110
D902	8-719-404-46	DIODE MA110
D903	8-719-404-46	DIODE MA110
D904	8-719-404-46	DIODE MA110
D905	8-719-404-46	DIODE MA110
D906	8-719-404-46	DIODE MA110
D907	8-719-404-46	DIODE MA110
D908	8-719-404-46	DIODE MA110
D909	8-719-404-46	DIODE MA110
D917	8-719-404-46	DIODE MA110
D920	8-719-976-96	DIODE DTZ4.7C

FERRITE BEAD

FB013	1-414-386-11	INDUCTOR, FERRITE BEAD
FB901	1-412-911-11	INDUCTOR, FERRITE BEAD

IC

IC901	8-759-162-62	IC CXD8478Q
IC902	8-759-156-55	IC CD74HC4046AM
IC903	8-759-162-80	IC MM1170BFB
IC904	8-759-370-06	IC HD6433337WA02FP
IC905	8-759-981-48	IC TL082M
IC906	8-759-100-96	IC UPC4558G2
IC907	8-759-353-44	IC ST24C08FM6TR
IC908	8-759-008-67	IC MC14066BF
IC909	8-759-981-48	IC TL082M
IC911	8-759-925-90	IC SN74HC74ANS
IC912	8-759-925-72	IC SN74HC02ANS
IC913	8-759-191-50	IC TDA9102C

COIL

L905	1-410-645-31	INDUCTOR	100UH

TRANSISTOR

Q901	8-729-120-28	TRANSISTOR 2SC1623-L5L6
Q902	8-729-216-22	TRANSISTOR 2SA1162-G
Q903	8-729-120-28	TRANSISTOR 2SC1623-L5L6
Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6
Q905	8-729-120-28	TRANSISTOR 2SC1623-L5L6
Q907	8-729-120-28	TRANSISTOR 2SC1623-L5L6
Q908	8-729-027-52	TRANSISTOR DTC124EKA-T146
Q909	8-729-027-52	TRANSISTOR DTC124EKA-T146
Q910	8-729-232-13	TRANSISTOR 2SK1078
Q911	8-729-027-52	TRANSISTOR DTC124EKA-T146
Q912	8-729-120-28	TRANSISTOR 2SC1623-L5L6

RESISTOR

R900	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R901	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R902	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R903	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R904	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R905	1-216-025-91	METAL GLAZE	100	5%	1/10W
R906	1-216-682-11	METAL CHIP	20K	0.50%	1/10W
R907	1-218-760-11	METAL CHIP	220K	0.50%	1/10W
R908	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R909	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R910	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R911	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R912	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R913	1-216-639-11	METAL CHIP	330	0.50%	1/10W
R914	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R915	1-216-037-00	METAL GLAZE	330	5%	1/10W
R916	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R917	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R918	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R919	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R920	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R921	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R922	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R923	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R924	1-216-037-00	METAL GLAZE	330	5%	1/10W
R925	1-216-049-91	METAL GLAZE	1K	5%	1/10W

N

REF.NO.	PART NO.	DESCRIPTION		REMARK
R926	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R927	1-249-393-11	CARBON	10	5% 1/4W F
R928	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W
R929	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R930	1-208-771-11	METAL CHIP	360	0.50% 1/10W
R931	1-216-682-11	METAL CHIP	20K	0.50% 1/10W
R932	1-208-806-11	METAL CHIP	10K	0.50% 1/10W
R933	1-216-097-91	METAL GLAZE	100K	5% 1/10W
R934	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W
R935	1-216-067-00	METAL GLAZE	5.6K	5% 1/10W
R936	1-216-097-91	METAL GLAZE	100K	5% 1/10W
R937	1-216-655-11	METAL CHIP	1.5K	0.50% 1/10W
R938	1-208-803-11	METAL CHIP	7.5K	0.50% 1/10W
R939	1-208-824-11	METAL CHIP	56K	0.50% 1/10W
R940	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R941	1-216-671-11	METAL CHIP	6.8K	0.50% 1/10W
R942	1-216-067-00	METAL GLAZE	5.6K	5% 1/10W
R943	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R944	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R945	1-216-081-00	METAL GLAZE	22K	5% 1/10W
R946	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R947	1-216-695-11	METAL CHIP	68K	0.50% 1/10W
R948	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W
R949	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R950	1-216-694-11	METAL CHIP	62K	0.50% 1/10W
R951	1-208-784-11	METAL CHIP	1.2K	0.50% 1/10W
R952	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W
R953	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R954	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R955	1-216-033-00	METAL GLAZE	220	5% 1/10W
R956	1-216-697-91	METAL CHIP	82K	0.50% 1/10W
R957	1-216-117-00	METAL GLAZE	680K	5% 1/10W
R958	1-216-105-91	METAL GLAZE	220K	5% 1/10W
R960	1-216-067-00	METAL GLAZE	5.6K	5% 1/10W
R961	1-216-075-00	METAL GLAZE	12K	5% 1/10W
R962	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R964	1-208-771-11	METAL CHIP	360	0.50% 1/10W
R965	1-216-075-00	METAL GLAZE	12K	5% 1/10W
R966	1-216-117-00	METAL GLAZE	680K	5% 1/10W
R971	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R973	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R974	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R975	1-216-673-11	METAL CHIP	8.2K	0.50% 1/10W
R976	1-208-800-11	METAL CHIP	5.6K	0.50% 1/10W
R977	1-216-663-11	METAL CHIP	3.3K	0.50% 1/10W
R978	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R979	1-216-037-00	METAL GLAZE	330	5% 1/10W
R981	1-216-121-91	METAL GLAZE	1M	5% 1/10W
R982	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R983	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R985	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W
R986	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W
R987	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R988	1-216-081-00	METAL GLAZE	22K	5% 1/10W
R989	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R990	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R991	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R992	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R993	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R994	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R995	1-216-667-11	METAL CHIP	4.7K	0.50% 1/10W
R996	1-216-651-11	METAL CHIP	1K	0.50% 1/10W
R997	1-218-758-11	METAL CHIP	180K	0.50% 1/10W
R998	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R999	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1000	1-208-806-11	METAL CHIP	10K	0.50% 1/10W
R1001	1-216-295-91	CONDUCTOR, CHIP		
R1002	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1003	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1004	1-208-806-11	METAL CHIP	10K	0.50% 1/10W
R1005	1-216-659-11	METAL CHIP	2.2K	0.50% 1/10W
R1006	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1007	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1008	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1009	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1010	1-216-651-11	METAL CHIP	1K	0.50% 1/10W
R1011	1-208-806-11	METAL CHIP	10K	0.50% 1/10W
R1012	1-208-810-11	METAL CHIP	15K	0.50% 1/10W
R1013	1-216-689-11	METAL CHIP	39K	0.50% 1/10W
R1014	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1015	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1016	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1017	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1018	1-216-295-91	CONDUCTOR, CHIP		
R1020	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1021	1-208-814-11	METAL CHIP	22K	0.50% 1/10W
R1022	1-208-810-11	METAL CHIP	15K	0.50% 1/10W
R1023	1-216-677-11	METAL CHIP	12K	0.50% 1/10W
R1024	1-216-661-11	METAL CHIP	2.7K	0.50% 1/10W
R1025	1-216-685-11	METAL CHIP	27K	0.50% 1/10W
R1026	1-208-814-11	METAL CHIP	22K	0.50% 1/10W
R1027	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1028	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1029	1-208-784-11	METAL CHIP	1.2K	0.50% 1/10W
R1030	1-216-049-91	METAL GLAZE	1K	5% 1/10W
R1031	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1032	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1033	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1034	1-216-631-11	METAL CHIP	150	0.50% 1/10W
R1035	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1036	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1037	1-216-073-00	METAL GLAZE	10K	5% 1/10W
R1038	1-216-073-00	METAL GLAZE	10K	5% 1/10W

CRYSTAL

REF.NO.	PART NO.	DESCRIPTION
X901	1-577-076-11	VIBRATOR, CRYSTAL (16MHz)

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK
		MISCELLANEOUS	
	⚠1-251-382-22	INLET, AC 3P(WITH NOISE FILTE)	
	⚠1-406-790-71	COIL, DEMAGNETIZATION	
	⚠1-451-438-11	DEFLECTION YOKE	
	⚠1-765-718-11	CORD SET, POWER (10A/125A)	
	1-776-033-11	CABLE	
	⚠8-453-006-11	NECK ASSY, PICTURE TUBE (NA3013-M)	
V901	⚠8-736-050-05	PICTURE TUBE 20SQ4	
	⚠8-736-050-95	ITC ASSY(20SQ4-R3)	

Specifications

CRT	Type	20" (19.1" viewable) diagonal, 0.30mm Aperture Grille Pitch, 90° deflection	
	Phosphor	RGB medium short persistence	
	Glass Surface	Anti-Reflection coating TM=39%	
Input Signal	Video	RGB analog (0.714 Vp-p, 75 ohms)	
	Sync	H/V separate (TTL), Composite, Sync-on-Green f_h: 30-85 KHZ, f_v: 48-150Hz	
Compatibility	PC	IBM XT, AT, 386, 486, Pentium or PS/2 and compatibles (from VGA up to 1600x1280 non-interlaced)	
	Mac*	Macintosh II family, LC, LCII, Centris, Quadra, Performa, and Power Mac (up to 1280x1024)	
	Other	Most workstations. May require a special adapter.	
Connector	Rear	Video In	15-pin mini D-sub
		Power	3-pin Plug (IEC320)
Power	Voltage	90-132/198-264Vac/50-60Hz	
	Consumption	150W (max)	
User Controls/ Functions	Buttons	Power On/Off, Constast/Adjustment, Brightness/ Adjustment, Horizonal and Vertical Centering. Horizontal and Vertical Screen Sizing, Rotation/ Pincushion, Convergence, Color Temperature Select Option, Input Connection Signal Option, Lock Buttons Option, Reset	
Video Input	Bandwidth	175mhz (typical)	
Misconvergence		0.30mm (max) at center 0.40mm (max) at corner	
Display Area	Factory Setting	373mm (H) x 280mm (V) typical	(Dependent upon signal timing used)
	Large Scan	388mm (H) x 292mm (V)	
Operating Conditions	Temperature	50°F to 104°F 10°C to 40°C)	
	Humidity	10% to 80%	
	Altitude	10,000 feet	
Storage Conditions	Temperature	-40°F to 140°F (-40°C to 60°C)	
	Humidity	5% to 90%	
	Altitude	35,000 feet	
Dimensions	Packing	644mm (W) x 655mm (H) x 706mm (D) (25.4" x 25.8" x 27.8")	
	Physical	472mm (W) x 494mm (H) x 501mm (D) (18.6" x 19.4" x 19.7")	
Weight	Gross	34.5kg (76.1 lbs)	
	Net	29.5kg (65 lbs)	
Regulations		UL, CSA, FCC-B, DHHS, TUV, MPR-II, PTB DOC, CE, VCCI II, ISO9241-3	
Power Savings LED Modes		Power LED	Power Saving LED
	"On"	Green	Off
	"Standby"	Green	Orange
	"Suspend"	Green	Orange
	"Off"	Off	Orange
Others		DDC1™, DDC2B ™, DDC2AB™	

All products and trademarks are brand names of their respective companies. Specifications subject to change without notice.

*Requires Macintosh cable adapter.

DIAGNOSIS

Failure	Power Saving LED	Power LED
HV failure	Off	Blink Amber
Horizontal/Vertical deflection failure, thermal protector	Blink Amber	Off
ABL protector	Blink Amber	Blink Amber
Aging/Self Test	Off	Blink Amber, Off, Green and Off

Aging Mode: Raster aging	During Power Save, press "OPTION" Key for longer than 2 seconds.
Self Test: OSD color-bar indication	During Power Save, press "CONTRAST+" Key for longer than 2 seconds.

TIMING SPECIFICATION

PRIMARY MODE				PRIMARY			CONV.			FOCUS
MODE AT PRODUCTION	MODE1	MODE2	MODE3	MODE4	MODE5	MODE6	MODE7	MODE8	MODE9	MODE10
RESOLUTION	640 X 480	800 X 600	1024 X 768	1280 X 1024	640 X 480	800 X 600	1024 X 768	832 X 624	1024 X 768	1152 X 870
CLOCK	31.500 MHz	49.500 MHz	78 750 MHz	135.000 MHz	25.175 MHz	56 250 MHz	94 500 MHz	57.285 MHz	80.000 MHz	100 000 MHz
— HORIZONTAL —										
H·FREQ	37.500 kHz	46.875 kHz	60 023 kHz	79.976 kHz	31 469 kHz	53.674 kHz	68.677 kHz	49.727 kHz	60.241 kHz	68.681 kHz
	usec	usec	usec	usec	usec	usec	usec	usec	usec	usec
H. TOTAL	26.667	21 333	16.660	12.504	31.778	18.631	14.561	20.110	16 600	14 560
H. BLK	6.349	5.172	3 657	3.022	6.356	4.409	3.725	5 586	3 800	3.040
H. FP	0.508	0.323	0.203	0.119	0.636	0 569	0.508	0.559	0 550	0.320
H. SYNC	2 032	1.616	1.219	1.067	3.813	1.138	1 016	1.117	1.200	1.280
H. BP	3.810	3.232	2 235	1.837	1 907	2.702	2.201	3 910	2 050	1.440
H. ACTIV	20.317	16 162	13 003	9.481	25.422	14 222	10.836	14.524	12 800	11 520
— VERTICAL —										
V. FREQ(HZ)	75.000 Hz	75.000 Hz	75.029 Hz	75.025 Hz	59.940 Hz	85.061 Hz	84.997 Hz	74.553 Hz	74.927 Hz	75 062 Hz
	lines	lines	lines	lines	lines	lines	lines	lines	lines	lines
V. TOTAL	500	625	800	1066	525	631	808	667	804	915
V. BLK	20	25	32	42	45	31	40	43	36	45
V. FP	1	1	1	1	10	1	1	3	3	3
V. SYNC	3	3	3	3	2	3	3	3	3	3
V. BP	16	21	28	38	33	27	36	37	30	39
V. ACTIV	480	600	768	1024	480	600	768	624	768	870
— SYNC —										
INT(G)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
EXT(H/V)/POLARITY	YES N/N	YES P/P	YES P/P	YES P/P	YES N/N	YES P/P	YES P/P	YES N/N	YES N/N	YES N/N
EXT(CS)/POLARITY	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
INT/NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT

96 1 29 VER

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL 5

2. DISASSEMBLY
   - 2-1. Cabinet and EMI Shield Removal 9
   - 2-2. A Board Removal 9
   - 2-3. Rear Panel Removal 10
   - 2-4. D Board Removal 10
   - 2-5. Service Position 11
   - 2-6. H1 Board Removal 11
   - 2-7. Picture Tube Removal 12

3. SAFETY RELATED ADJUSTMENT 13

4. ADJUSTMENTS 14

5. DIAGRAMS
   - 5-1. Block Diagram (With Frame Schematic Diagram) 17
   - 5-2. Circuit Boards Location 20
   - 5-3. Schematic Diagrams and Printed Wiring Boards ... 20
     - (1) Schematic Diagram of D Board 23
     - (2) Schematic Diagrams of A, N Boards 27
     - (3) Schematic Diagram of H1 Board 33
   - 5-4. Semiconductors 34

6. EXPLODED VIEWS
   - 6-1. Chassis 36
   - 6-2. Picture Tube 37
   - 6-3. Packing Materials 38

7. ELECTRICAL PARTS LIST 39

SAFETY CHECK-OUT
(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC Leakage. Check leakage as described below.

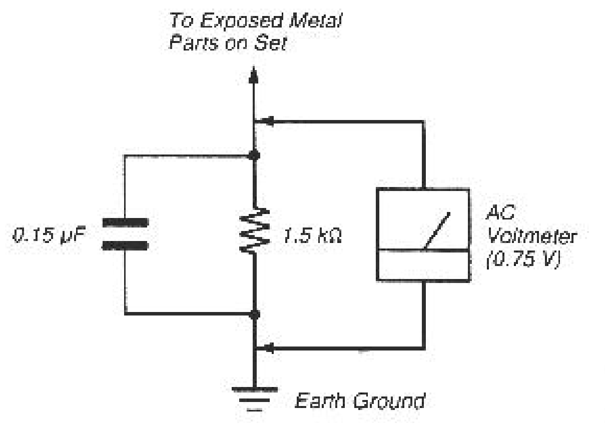


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOMs that are suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

WARNING!!

NEVER TURN ON THE POWER IN A CONDITION IN WHICH THE DEGAUSS COIL HAS BEEN REMOVED.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH VSC PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY VSC. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

AVERTISSEMENT!!

NE JAMAIS METTRE SOUS TENSION QUAND LA BOBINE DE DEMAGNETISATION EST ENLEVÉE.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SONT CRITIQUES POUR LA SÉCURITÉ. NE LES REMPLACER QUE PAR UNE PIÈCE PORTANT LE NUMÉRO SPECIFIÉ. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNE-MENT EST SUSPECTÉ.

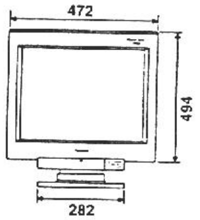
SECTION 1
GENERAL

The operating Instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

Dimensions

Front View...

Width	472mm (18.6")
Height	494mm (19.4")
Base	282mm (11.10")

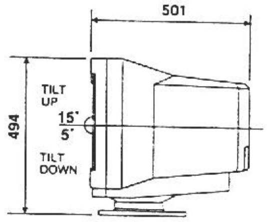


Side View...

Depth 501mm (19.7")

Tilt

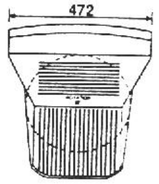
UP	15°
DOWN	5°



Top View...

Swivel Angle

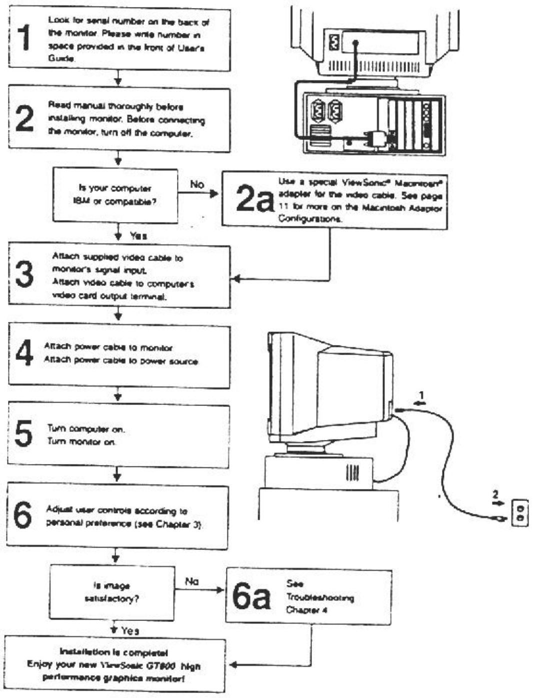
LEFT	45°
RIGHT	45°



INSTALLATION

2

Power Up



1 Look for serial number on the back of the monitor. Please write number in space provided in the front of User's Guide.

2 Read manual thoroughly before installing monitor. Before connecting the monitor, turn off the computer.

Is your computer IBM or compatible?

2a Use a special ViewSonic® Macintosh® adapter for the video cable. See page 11 for more on the Macintosh Adaptor Configurations.

3 Attach supplied video cable to monitor's signal input. Attach video cable to computer's video card output terminal.

4 Attach power cable to monitor Attach power cable to power source.

5 Turn computer on. Turn monitor on.

6 Adjust user controls according to personal preference (see Chapter 3)

Is image satisfactory?

6a See Troubleshooting Chapter 4

Installation is complete! Enjoy your new ViewSonic *GT800* high performance graphics monitor!

Signal Connections

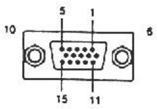
Connect the ViewSonic *GT800* full-color monitor to an IBM or compatible PC. Use the 15 Pin High Density (HD) Mini D-Sub Connector (male) on the end of the video cable attached to the monitor.

When connecting to a Macintosh, you need to use the supplied adapter (see the next page).

Caution: Be careful not to bend any of the pins in the connector at the end of the cable. If the connector on the monitor's attached video cable has a bent or broken pin, it must be serviced by a ViewSonic authorized repair center.

The table below lists pin assignments for the signals that are sent from your PC or Macintosh to your monitor.

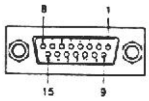
PC



15 Pin HD Mini D-Sub Connector (Female) For Video Output

Pin No.	Signals
1	Red Video
2	Green Video
3	Blue Video
4	No Connection
5	DDC Ground
6	Red Ground
7	Green Ground
8	Blue Ground
9	+5V
10	Sync Ground
11	No Connection
12	Bi-directional Data (SDA)
13	Horizontal/Composite Sync
14	Vertical Sync (VCLK)
15	Data Clock (SCL)

Macintosh



15 Pin D-Sub Connector (Female) For Video Output

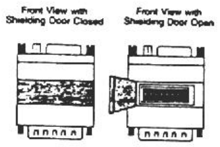
Pin No.	Signals
1	Red Ground
2	Red Video
3	Composite Sync
4	Sense Line 0
5	Green Video
6	Green Ground
7	Sense Line 1
8	No Connection
9	Blue Video
10	Sense Line 2
11	Ground
12	Vertical Sync
13	Blue Ground
14	Ground
15	Horizontal Sync

Configurations of the Macintosh® Adapter by ViewSonic®

Dip Switch Function Table

Resolution	Switch Settings (ON)
640x480	1258
832x624	2458
1024x768	2358
1152x870	123458
Multi-Res	12568

Note: For Sync on green, switch number 5 and 8 to the OFF position.


Front View with Shielding Door Closed
Front View with Shielding Door Open

Example: To set up the adapter for a ViewSonic *GT800* Monitor at Multi-Res resolution, change the following switches: 1, 2, 5, 6, and 8 to the ON position. All other switches should be OFF.

Directions for setting switches:

1) Open the shielding door.
2) Examine the Dip Switch Function Table for the proper switch setting.
3) Using the tip of a pen, slide the switch into the appropriate position.
4) Close the shielding door when finished.
5) Install the adapter in the Monitor Port on the back of your Macintosh.
6) Tighten the two adapter thumb screws until snug.
7) Connect the Video Cable to the adapter.
8) Repeat step #6 until the monitor cable thumb screws are snug.
9) Turn your monitor ON and start up your Macintosh.

Note: ViewSonic shall not be liable for damages resulting from use of ViewSonic's Macintosh connector in any way other than those specified on this page or with other than a ViewSonic monitor.